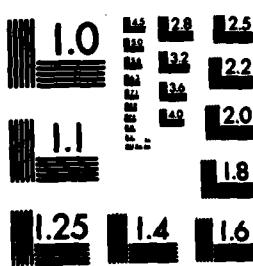


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Observations of Currents,
Temperature, Pressure,
and Sea Level in the
Gulf of California 1982-1986.
A Data Report

12
Observaciones de Corrientes,
Temperatura, Presión
y Nivel del Mar en el
Golfo de California 1982-1986.
Informe de Datos.

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CICERO, Apartado 2754, Ensenada, BC, Mexico

April/Abril 1986

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Abstract

Numerous observations of horizontal currents, ocean temperature, and bottom pressure were made in the Gulf of California from November 1982 through January 1986, as part of a joint field experiment conducted by researchers at Centro de Investigación Científica y de Educación Superior de Ensenada and at Scripps Institution of Oceanography. The objective of the moored observations was to determine spatial and temporal scales of circulation, primarily along a transect in the central region of the Gulf of California, as well as the interrelationship among the various fields measured. This ~~data~~ report includes a brief description of the instrumentation, a discussion of the data analysis procedures, and presents the time series and simple statistics of the observations.

Resumen

Varias observaciones de corrientes horizontales, temperatura oceánica y presión en el fondo fueron realizadas en el Golfo de California, de Noviembre 1982 a Enero de 1986, como parte de un experimento conjunto, desarrollado por investigadores del Centro de Investigación Científica y de Educación Superior de Ensenada, B.C. y del Instituto Scripps de Oceanografía. El objetivo de las observaciones con anclajes consiste en determinar las escalas espaciales y temporales de la circulación, principalmente a lo largo de un transecto en la región central del Golfo de California, así como la interrelación entre los varios campos medidos. Este informe de datos incluye una descripción breve de los instrumentos, una discusión de los procedimientos de análisis y presenta las series temporales y sus estadísticas básicas.

1. Introduction

The observations presented in this report were collected during a three year joint field experiment in the Gulf of California conducted by researchers at Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE) and Scripps Institution of Oceanography (SIO). Different observations were collected during the experiment to study various physical processes in the Gulf, from finestructure to the effects of El Niño. During this experiment, moorings were used to obtain long time series of horizontal currents, ocean temperature, and bottom pressure. This portion of the experiment was designed in part to identify coherent circulation patterns in the Gulf, particularly along a cross-gulf transect from Santa Rosalia to Guaymas. Figures 1 and 2 show the mooring locations and Figure 3 the time frame of the experiment. A list of the mooring deployments and data return is given in Table 1.

In addition to the moored data collected with both SIO and CICESE instruments, the experiment documented the temporal behavior of various atmospheric parameters through measurements with fixed weather stations (PAM II), and their spatial distribution with an instrumented aircraft, all provided by the National Center for Atmospheric Research (NCAR). Furthermore, sea level records were supplied by CICESE and by the National Autonomous University of Mexico (UNAM). These data sets form the basis for a future analysis of the Gulf's circulation; this

1. Introducción

Las observaciones que se presentan en este informe fueron obtenidas durante un experimento desarrollado en conjunto en el Golfo de California por investigadores del Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE) y del Instituto Scripps de Oceanografía (SIO). Estos datos fueron obtenidos para estudiar diversos procesos físicos en el Golfo, desde la estructura fina hasta los efectos de El Niño. En la porción del experimento que tratamos aquí, se utilizaron anclajes en varias ubicaciones para obtener series temporales de larga duración en el Golfo, particularmente a lo largo de un transecto transversal al Golfo, entre Santa Rosalia, B.C. y Guaymas, Son. Las Figuras 1 y 2 muestran las posiciones de los anclajes y la Figura 3 sintetiza el marco temporal del experimento. Una lista de los anclajes instalados y de los datos recobrados de ellos se proporciona en la Tabla 1.

Además de los datos obtenidos en los anclajes con instrumentos de SIO y de CICESE, el experimento documentó el comportamiento temporal de varios parámetros atmosféricos por medio de estaciones meteorológicas fijas (PAM II), y la distribución espacial de los mismos por medio de un avión instrumentado, proporcionados por el National Center for Atmospheric Research (NCAR). Además, CICESE y la Universidad Nacional Autónoma de México (UNAM) proporcionaron los datos del nivel del mar. Este conjunto de datos forma la base para un análisis

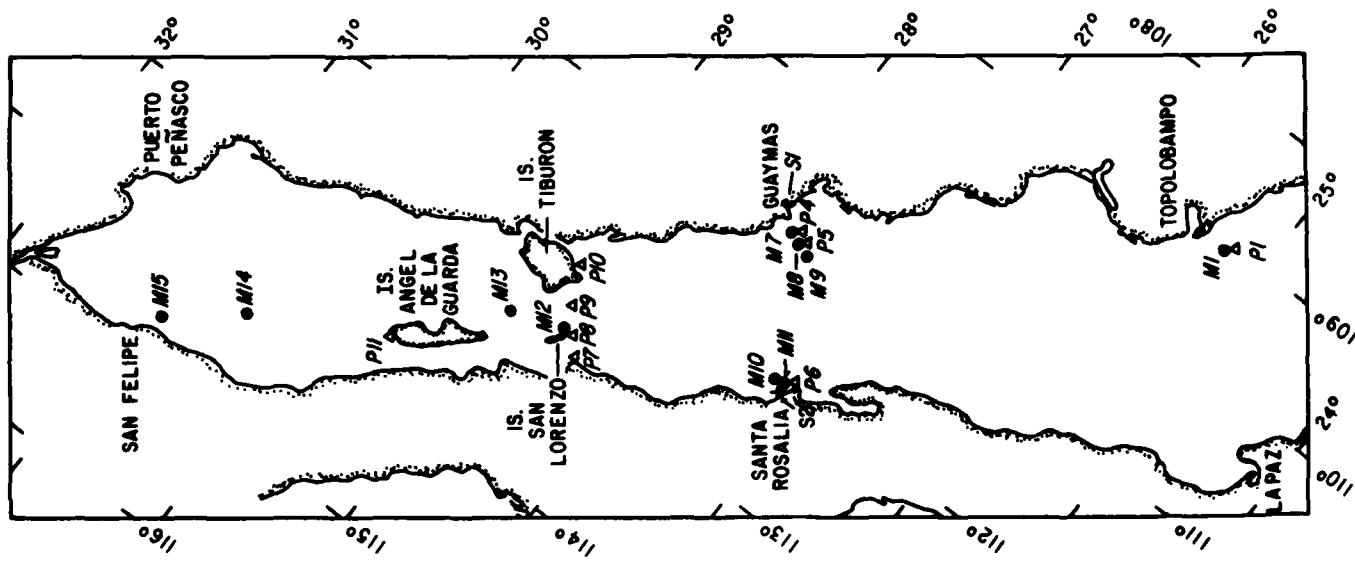


Fig. 1. Locations of current meter moorings (M), bottom pressure sensors (P), and sea level stations (S).

Fig. 1. Localización de correntómetros (M), sensores de presión (P) y de las estaciones mareográficas (S).

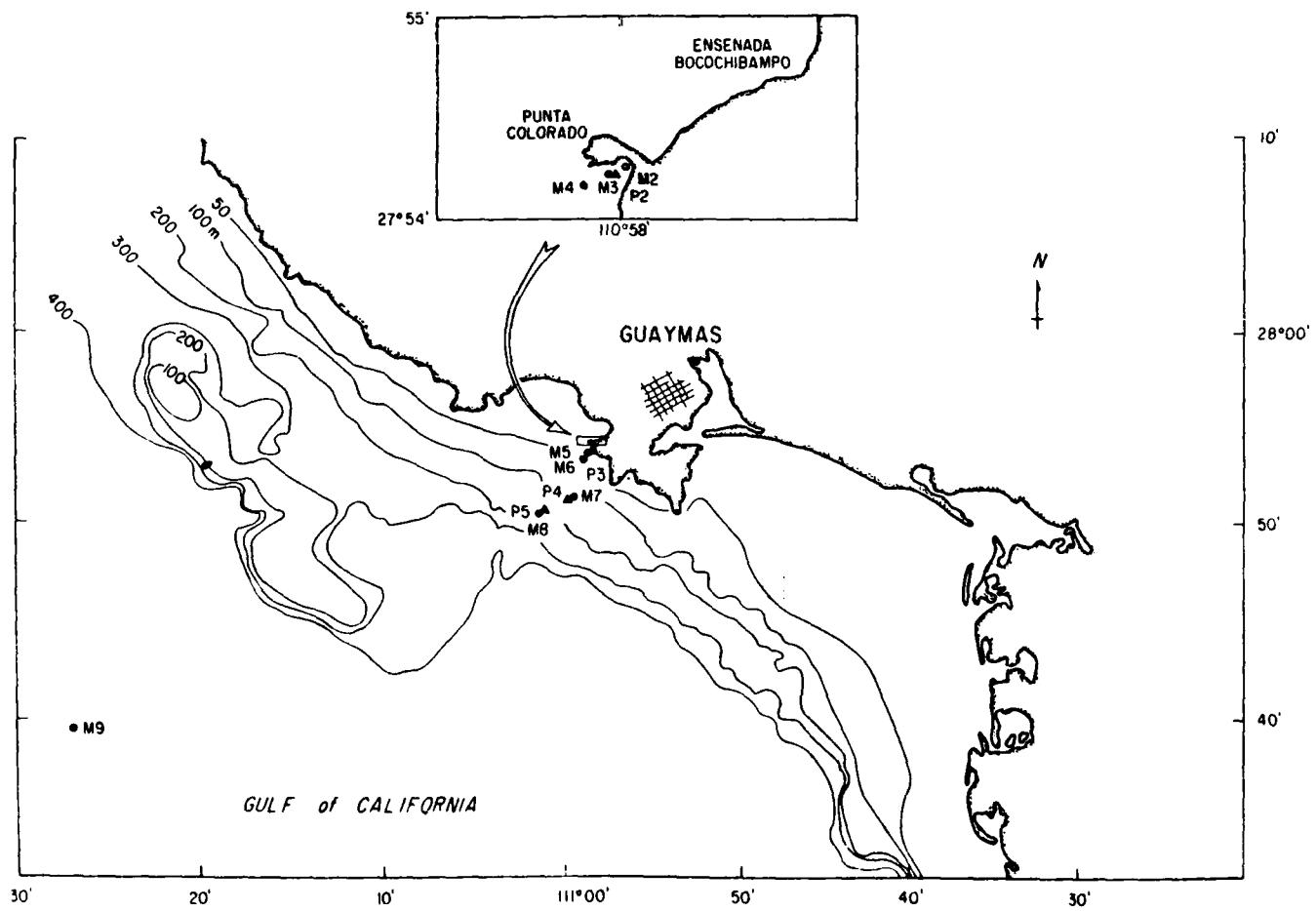


Fig. 2. Locations of sensors on the Guaymas shelf.
Fig. 2. Localización de los sensores en la plataforma de Guaymas. -3-

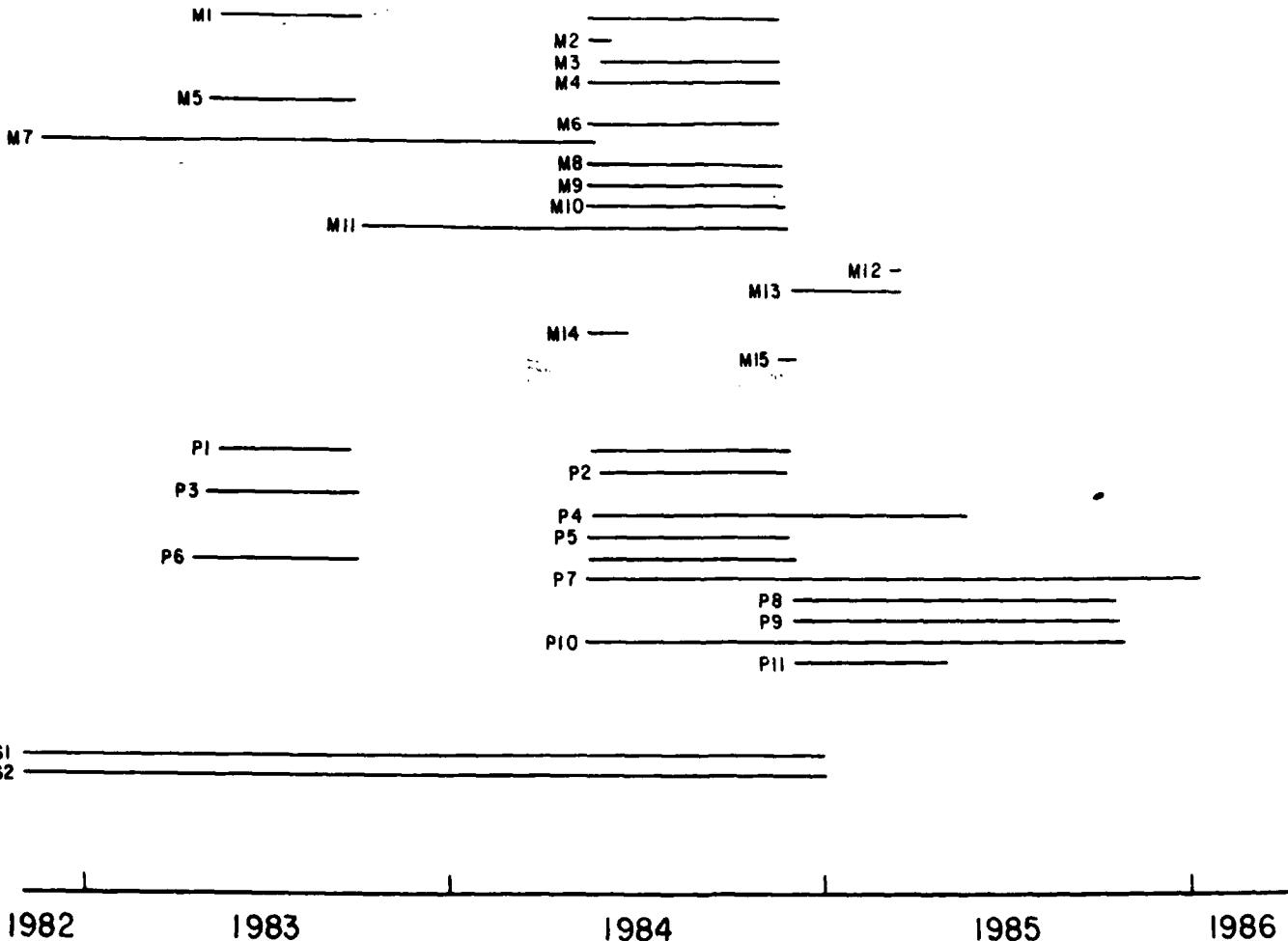


Fig. 3. Deployment periods.

Fig. 3. Períodos de despliegue.

report, however, will only present the moored observations and the sea level records. Overflight data are already available in Candela et al (1984, 1985); the PAM II data will appear shortly in a separate data report.

futuro de la circulación del Golfo. Sin embargo, el informe presente incluye únicamente las observaciones obtenidas de los anclajes y las series temporales del nivel del mar. Los datos obtenidos durante los vuelos están disponibles en Candela et al (1984, 1985); los datos de las PAM II serán publicados en breve en un informe separado.

2. Instrumentation

Most current measurements reported here were made with Vector Measuring Current Meters (VMCM's), a cartesian sampling instrument that records two orthogonal components of horizontal currents, at intervals ranging from 1 to 8 minutes with an accuracy of ± 2 cm/sec. A detailed description of this instrument is provided by Weller (1978). Other measurements were made with General Oceanics inclinometer current meters, by averaging four data points in every hourly burst (Barton et al, 1980), or with a Marsh-McBirney electromagnetic current meter, which sampled at 30 second intervals with a ± 5 cm/sec uncertainty in the mean and an accuracy of 5% in the gain.

Bottom pressure was observed with digiquartz sensors manufactured by Paroscientific with a sampling interval of either 4 or 8 minutes, and

2. Instrumentos

La mayor parte de las mediciones de corrientes que se presentan aquí fueron obtenidas con correntímetros de medición vectorial (VMCM), mismos que observan las dos componentes ortogonales de la corriente horizontal, en intervalos que varían de 1 a 8 minutos, con una precisión de ± 2 cm/sec. Este instrumento está descrito con detalle por Weller (1978). Otras observaciones se hicieron con correntímetros de inclinómetro General Oceanics, promediando cuatro mediciones en cada ráfaga horaria (Barton et al, 1980), o con un correntímetro electromagnético Marsh-McBirney, registrando los datos con intervalos de 30 segundos, una incertidumbre de ± 5 cm/sec en la media y una precisión de 5% en la ganancia.

La presión en el fondo fue registrada con sensores digitales de cuarzo de marca

an accuracy of ± 1 millibar. This sensor is described by Erdman (1983).

Temperature was measured at each current meter and pressure sensor with a thermistor mounted inside the pressure housing. The response time of the thermistor is approximately 5 minutes. In addition, thermistor chains measured temperature at some locations (M2, M4, M8, M10). The thermistor chains consisted of 5 to 15 thermistors spliced in regular intervals into an underwater cable. The response time for these thermistors is approximately 16 minutes. The accuracy of all temperature measurements is $\pm .05^{\circ}\text{C}$.

Paroscientific, con intervalos entre muestras de 4 ó de 8 minutos y una exactitud de ± 1 millibar. Este sensor está descrito por Erdman (1983).

La temperatura fue medida en cada correntómetro y en los sensores de presión, con un termistor montado en el interior de la cápsula de presión, cuyo tiempo de respuesta es de aproximadamente 5 minutos. Otras observaciones de temperatura se hicieron en varios puntos (M2, M4, M8, M10), con cadenas de termistores consistentes de 5 a 15 sensores intercalados a intervalos regulares en un cable submarino. El tiempo de respuesta de estos termistores es de aproximadamente 16 minutos. La exactitud de todas las mediciones de temperatura es de $\pm 0.5^{\circ}\text{C}$.

3. Data Processing

Data for all instruments were recorded on cassette tape. After the data has been transferred from cassette tape to disc, the records were examined for timing discrepancies by cross-checking with known times (i.e. start and stop time of instrument, in and out of the water times). In certain cases the cassette tape was unable to hold all the information, or the instrument failed before recovery, making a timing check impossible. The data were then scanned for

3. Procesamiento de Datos

El registro de datos se efectuó en cintas de cassette para todos los instrumentos. Al transferir los datos de cassette a disco, los registros se corroboran contra tiempos conocidos (v.gr. prendido y apagado del instrumento, entrada y salida del agua) para detectar discrepancias en la grabación del tiempo. En algunos casos la cinta del cassette resultó insuficiente para almacenar toda la información o el instrumento presentó fallas antes de recobrarse, imposibilitando esa verificación.

"bad" data points, defined by a difference from adjacent points of more than three standard deviations away from the average difference for that record. The quality of these points was assessed individually. Bad data gaps less than one day in duration that may result in the record were replaced by linear interpolation from adjacent points. Gaps longer than one day were replaced by the value -9900 to identify a break in the time series and are listed in Table 1.

With regard to temperature, each individual thermistor was calibrated before it was placed in the sensor package. This gives an empirical fit between temperature (in degrees Celsius) and the resistance of the thermistor. In addition, the data logger electronics in each instrument was calibrated prior to the deployment, providing a second order fit between the resistance of the thermistor and the value which was written to tape. Combining these two steps yielded a calibration function between the values on the tape and the temperature in degrees Celsius. To test the accuracy of the calibration, the instrument itself was immersed in a temperature bath and allowed to write to tape for one or two temperature values. The agreement between these values and the calibration method described above was generally within $\pm .05^{\circ}\text{C}$. The calibration of the electronics package was repeated after recovery of the instrument to check for drift. Calibration of the thermistor chains was done in the same way as the calibration test mentioned above; the instrument was allowed to run in a temperature bath over a

Enseguida se examinan las series para detectar datos falsos, definidos por una diferencia con puntos adyacentes superior a tres desviaciones estándar de la diferencia media del registro. La calidad de estos puntos anormales se evalúa individualmente. Cuando las interrupciones así provocadas en el registro tienen una duración inferior a 1 día, se reconstruyen por una interpolación lineal entre puntos adyacentes. Las interrupciones mayores de 1 día se indican substituyendo los datos incorrectos por el valor -9900 y se enumeran en la Tabla 1.

La calibración de temperatura se efectuó para cada termistor individual antes de colocarlo con el conjunto de sensores. Esta provee un ajuste empírico entre la temperatura (en grados Celsius) y la resistividad del termistor. Por otra parte, el paquete electrónico grabador de datos de cada instrumento se calibra antes de la instalación, lo cual provee un segundo ajuste entre la resistividad del termistor y el valor que queda grabado en la cinta. La combinación de estas dos etapas resulta en una función de calibración entre los valores en la cinta y la temperatura en grados Celsius. Para verificar la precisión de esta calibración, el instrumento mismo se sumerge en un baño térmico, obteniéndose registros en la cinta para uno o dos valores de temperatura. La concordancia entre estos valores y el método de calibración descrito arriba es generalmente del orden de $\pm 0.5^{\circ}\text{C}$ o mejor. La calibración del paquete electrónico se repite posteriormente a la recuperación del instrumento para corregir una

wide range of temperatures.

The pressure data were processed according to calibrations supplied by the manufacturer for each individual pressure sensor. No corrections for errors due to temperature effects on the sensor itself and on its time base were applied for this experiment. Sudden jumps that occur in the mean value of several records are most likely due to settling of the instrument. To remove these effects, the tidal portion of the records was predicted and removed from the time series. Sudden changes in the mean value of this residual time series were then noted and corrected in the original time series. For this reason, mean values for pressure time series are meaningless, and are not included in Tables 3 and 4.

Finally, hourly averaged versions of all the time series were formed using a standard running mean boxcar filter. The time series were also low-passed filtered by a convolution of the hourly values with a Groves filter of 51 weights and a half power frequency at 0.3 cycles/day (Groves, 1956).

4. Data Presentation

The data in this report are presented in 7

deriva posible. La calibración de las cadenas de termistores se lleva a cabo en la misma forma que la prueba descrita arriba; el instrumento se hace funcionar en un baño térmico sobre un rango amplio de temperaturas.

Los datos de presión fueron procesados de acuerdo a las curvas de calibración provistas por el fabricante de cada sensor individual, despreciándose los errores debidos a efectos térmicos sobre el sensor mismo o sobre su base temporal. Los saltos repentinos que se observan en ocasiones se deben, en toda probabilidad, a asentamientos del instrumento. Para eliminar estos efectos, la marea de predicción se sustrae de cada registro, los cambios repentinos observados en las series residuales se anotan y se corrigen en las series originales. Por ello, el valor medio de estas series de presión carece de sentido y se omite de las Tablas 3 y 4.

Se formaron también versiones medias horarias de todas las series, utilizando un filtro *boxcar* de media corrida. Por otra parte, las series se filtraron de paso bajo, con una convolución de los valores horarios con un filtro de Groves de 51 pesos y una frecuencia de potencia media en 0.3 ciclos/día (Groves, 1956).

4. Presentación de los Datos

Los datos se presentan en este informe en

month intervals, corresponding to each deployment period. The plots are constructed with four hour samples of the hourly averaged time series. When an instrument was deployed in the same location for adjacent 7 month intervals the entire time series is also presented in low frequency (filtered) form.

The time series of current are plotted with respect to local principal axes, which are listed in Table 2. Because the orientation of maximum along-shelf current varied with season, with location on the shelf, and with the depth of the instrument in the water column, and because the local bathymetry was often very complicated, these axes are rather arbitrary and are meant only as a convenient way to present the data.

A few exceptions to this scheme of presentation occur with the instruments at the M2 mooring, which were designed to document smaller scale features. Observations from these sensors are plotted on an expanded time scale, as well as in the time frame of the main experiment. The pressure sensor at P2 worked only sporadically, hence the data in this record cannot be filtered. Instead, the tide predicted at the S1 tide station is removed from the record and the residual series presented in place of the low frequency record.

Elementary statistics for each of the time series are given in Table 3. The statistics are grouped according to deployment period as well as statistics for records longer than a single deployment. It is here that the mean values of the

intervalos de 7 meses, correspondientes a cada período de instalación. Las gráficas se construyen con datos a intervalos de cuatro horas, obtenidas de las series media horarias. Cuando un instrumento fue instalado en la misma posición durante otros 7 meses adyacentes, la serie temporal total se presenta también en una versión filtrada de paso bajo.

Las series temporales de corrientes están graficadas con respecto a los ejes principales locales, recopilados en la Tabla 2. Debido a que la orientación de la máxima corriente longitudinal a la costa varía con las estaciones, con la ubicación sobre la plataforma y con la posición del instrumento en la columna de agua y porque, además, la batimetría local es con frecuencia muy complicada, estos ejes representan solamente una manera arbitraria pero conveniente para presentar los datos.

Algunas excepciones a este esquema de presentación ocurren con los instrumentos colocados en el anclaje M2, que fueron diseñados para observar estructuras de escala menor. Las observaciones de estos sensores se grafican en una escala temporal expandida, así como en el marco temporal del experimento principal. El sensor de presión en P2 funcionó solamente en forma esporádica, por lo que los datos en este registro no pueden ser filtrados. En su lugar, la marea de predicción en S1 fue sustraída del registro y la serie residual presentada en lugar de la señal de baja frecuencia.

temperature time series (plotted with arbitrary offset) are shown. Statistics for pressure and sea level are only given for low-passed filtered series. Finally, Table 4 provides the statistics for the group of data taken during a common time interval, within the main phase of the experiment, for the purpose of intercomparison. Unless otherwise noted, the statistics are calculated from the hourly-averaged time series. The statistics shown are the mean and standard deviation, and the maximum and minimum values, where the first two are defined as:

Las estadísticas básicas para cada serie temporal se presentan en la Tabla 3. Estas quedan agrupadas de acuerdo al período de instalación y también calculadas para períodos consecutivos de mayor duración. Aquí se proporcionan los valores medios de las series de temperatura (graficadas con un punto de referencia arbitrario). Las estadísticas de los registros de presión y nivel del mar se calculan únicamente para las series filtradas de paso bajo. Finalmente, la Tabla 4 proporciona estadísticas de un grupo de datos tomados durante un intervalo común, comprendido dentro de la fase principal del experimento, para fines de comparación. Excepto donde queda indicado, las estadísticas para cada serie temporal se calculan en base a registros horarios. Estas son la media y desviación estándar y los valores máximos y mínimos, definiéndose las dos primeras como:

$$\bar{x} = \frac{1}{N} \sum_{i=1}^N x_i$$

$$SD = \left[\frac{1}{N} \sum_{i=1}^N (x_i - \bar{x})^2 \right]^{1/2}$$

5. Acknowledgements

The principal investigators for the moored instrument portion of the experiment are C. D. Winant, R. T. Guza and N. A. Bray at SIO, and A. Badan-Dangon, N. Christensen, Jr. and J. M. Robles at CICESE.

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Considerable support in various logistics matters was provided by Admiral Gilberto López Lira, Dirección General de Oceanografía de la Secretaría de Marina, and by Admiral Fernando Magaña Gayou, commander of the Mexican Navy

5. Agradecimientos

Los investigadores responsables del experimento con anclajes son C. D. Winant, R. T. Guza y N. A. Bray en SIO y A. Badan-Dangon, N. Christensen, Jr. y J. M. Robles en CICESE.

El éxito absoluto de este experimento en el terreno se debe en gran parte a la eficiente colaboración de varias personas. P. D'Acri y P. Harvey se responsabilizaron de la preparación de anclajes e instrumentos en SIO. C. Flores desarrolló la misma tarea en CICESE. La electrónica de los instrumentos permaneció en excelente estado gracias a W. Boyd, M. Kirk, R. Lowe, L. Ryssman y D. Stadille en SIO y a R. Hazas en CICESE. Varias de estas personas colaboraron además en la instalación misma de los anclajes, coordinada por C. D. Winant y M. Clifton en SIO y por J. Garcia en CICESE. Muy apreciada ayuda adicional se recibió de W. Waldorf, D. Muus, J. Becker, J. Candela, J. DeGraff, G. Hargreaves, C. Paden, J. Semler, U. Send y J. Wells. En la región misma del experimento recibimos auxilio considerable de H. Montiel y A. Robles del Instituto Nacional de Pesca, de nuestros colegas del ITESM, en particular del Dr. Fernando Manrique, de M. García de la Cooperativa de Ostioneros de Bacochibampo, de C. Soto de Radio Marina del Golfo y del Capitán M. Rebolledo, del Puerto de Guaymas.

En varios aspecto de logística, el Sr. Almirante Gilberto López Lira, Director General de Oceanografía de la Secretaría de Marina, y el

post at Santa Rosalia. In particular, we also wish to express our thanks to the crews of the R/V *El Puma*, Captains Ramirez and Padilla commanding, and of the R/V *New Horizon*, Captain Desjardins commanding, for their extremely professional collaboration, which was essential for the success of our mission.

Matters of customs, shipping and finances were expertly handled by V. Cunningham and J. Davis at SIO and by A. Padilla at CICESE. M. Squibb lent valuable assistance in processing the data. Figures and layout for this report were done by M. Clark.

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Sr. Almirante Fernando Magaña Gayou, comandante del Cuartel de Marina en Santa Rosalia, prestaron un apoyo entusiasta y permanente. Muy en particular, deseamos expresar nuestro agradecimiento a los tripulantes del B/O *El Puma*, dirigidos por los Capitanes F. Ramírez y E. Padilla y del B/O *New Horizon*, Capitán T. Desjardins, por una colaboración extremada y profesional, esencial en el éxito de nuestras misiones.

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TABLE 1: Instrument Deployments
TABLA 1: Despliegue de Instrumentos

Sta-	Water	Dep-	Latitude	Longitude	Date	Date	Inst.	Data
	tion Depth	th	N	W	Set	Recovered	Inst. Depth	Return
Esta-	Profun-	didad	Lat.	Long.	Fecha de	Fecha de	Profundidad	Datos
(m)	(m)				Despliegue	Recuperación	Inst. de Inst.	Recuperados
<hr/>								
November 1982 - May 1983								
Noviembre 1982 - Mayo 1983								
M7	100	27 51.6	111 01.1		11/18/82	05/01/83	V/T	10
M7	100	27 51.6	111 01.1		11/18/82	11/25/82	V*/T	70
M7	100	27 51.6	111 01.1		11/18/82	05/01/83	V/T	75
<hr/>								
May - November 1983								
Mayo - Noviembre 1983								
M1	100	25 01.7	108 53.9		05/17/83	11/02/83	V/T	10
M1	100	25 01.7	108 53.9		05/17/83	11/02/83	V*/T	70
P1	100	25 01.7	108 53.9		05/17/83	11/02/83	P/T	100
M5	35	27 53.4	110 58.7		05/01/83	11/03/83	V/T	10
P3	35	27 53.4	110 58.7		05/01/83	11/03/83	P/T	35
M7	100	27 51.8	111 00.6		05/01/83	11/03/83	V/T	10
M7	100	27 51.8	111 00.6		05/01/83	11/03/83	V*/T	70
M7	100	27 51.8	111 00.6		05/01/83	11/03/83	V/T	75
M11	86	27 13.1	112 02.5		04/29/83	11/03/83	V/T	10
M11	86	27 13.1	112 02.5		04/29/83	11/03/83	V/T	65
P6	86	27 13.1	112 02.5		04/29/83	11/03/83	P/T	86

List of abbreviations at end of table

Lista de abreviaturas al final de la tabla

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TABLE 1: Instrument Deployments (cont.)
TABLA 1: Despliegue de Instrumentos (cont.)

Sta-	Water	Date	Date	Inst.	Data	
tion Depth	Latitude	Longitude	Set	Recovered	Inst. Depth	Return
(m)	N	W			(m)	
Esta- Profun-	Fecha de Despliegue		Fecha de Recuperación	Profundidad Inst. de Inst.	Datos Recuperados	
didad	Lat.	Long.	O			
(m)	N	0		(m)		
November 1983 - May 1984						
Noviembre 1983 - Mayo 1984						
M7	100	27 52.0	110 57.1	11/03/83	05/11/84	V/T
M7	100	27 52.0	110 57.1	11/03/83	05/11/84	V*/T
M11	90	27 13.2	112 01.2	11/03/83	05/11/84	V/T
M11	90	27 13.2	112 01.2	11/03/83	05/11/84	V*/T
May - November 1984						
Mayo - Noviembre 1984						
M1	100	25 10.0	108 54.1	05/09/84	11/12/84	V/T
M1	100	25 10.0	108 54.1	05/09/84	11/12/84	V/T
P1	100	25 10.0	108 54.1	05/09/84	11/12/84	P/T
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	T
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	T
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	T
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	T
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	V**/T
M3	8	27 54.1	110 58.0	05/20/84	11/14/84	V**
P2	8	27 54.1	110 58.0	05/20/84	11/14/84	P/T

TABLE 1: Instrument Deployments (cont.)
 TABLA 1: Despliegue de Instrumentos (cont.)

Sta-	Water	Depth	Latitude	Longitude	Date	Date	Inst.	Data
		(m)	N	W	Set	Recovered	Inst.	Return
Esta-	Profun-	didad	Lat.	Long.	Fecha de Despliegue	Fecha de Recuperación	Profundidad Inst. de Inst.	Datos Recuperados
17 day gap: 10/20-11/6								
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	V/T	5	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	V/T	12	27 day gap: 5/30-6/25, 21 day gap: 9/17-10/7
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	2	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	4	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	6	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	8	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	10	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	12	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	14	complete
M6	50	27 53.0	110 58.8	05/10/84	11/13/84	V/T	10	45 day gap: 8/21-10/5/84
M6	50	27 53.0	110 58.8	05/10/84	11/13/84	V/T	20	complete
M6	50	27 53.0	110 58.8	05/10/84	11/13/84	V/T	30	T only, broken compass
M6	50	27 53.0	110 58.7	05/10/84	11/13/84	T	**	T-chain failed, no data
M7	100	27 51.1	110 59.3	05/10/84	*****	V/T	10	no data, mooring failure
M7	100	27 51.1	110 59.3	05/10/84	*****	V/T	30	no data, "
M7	100	27 51.1	110 59.3	05/10/84	*****	V/T	50	no data, "
M7	100	27 51.1	110 59.3	05/10/84	*****	V/T	70	no data, "
P4	100	27 51.1	110 59.3	05/10/84	05/26/85	P/T	100	T ends 5/16/85
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	V/T	10	complete

TABLE 1: Instrument Deployments (cont.)
TABLA 1: Despliegue de Instrumentos (cont.)

Sta-	Water	Date	Date	Inst.	Data			
tion	Depth	Latitude	Longitude	Set	Recovered	Inst.	Depth	Return
Esta-	Profun-	Feche de	Feche de	Profundidad	Datos			
ción	didad	Lat.	Long.	Despliegue	Recuperación	Inst. de Inst.	Recuperados	
	(m)	N	W			(m)		
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	20	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	30	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	40	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	50	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	60	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	70	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	85	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	100	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	115	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	130	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	145	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	160	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	175	complete
P5	200	27 50.0	111 01.2	05/10/84	11/14/84	P/T	200	offset in T
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V/T	10	lost
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V/T	50	complete
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V/T	100	T only, broken stinger
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V*/T	300	complete
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V*/T	500	complete
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V*/T	850	complete
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	V/T	10	V ends 9/8/84
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	20	ends 7/8/84
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	30	" "

TABLE 1: Instrument Deployments (cont.)
 TABLA 1: Despliegue de Instrumentos (cont.)

Sta-	Water	Depth	Latitude	Longitude	Date	Date	Inst.	Data
	(m)		N	W	Set	Recovered	Inst. Depth	Return
Está-	Profun-	didad	Lat.	Long.	Fecha de	Fecha de	Profundidad	Datos
	(m)		N	O	Despliegue	Recuperación	Inst. de Inst.	Recuperados
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 40	ends 7/8/84
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 50	" "
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 60	" "
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 70	" "
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 85	" "
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 100	" "
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 115	" "
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 130	" "
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 145	" "
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 160	" "
M10	200	27 14.0		112 01.5	05/11/84	11/14/84	T 175	" "
M11	90	27 14.0		112 02.5	05/11/84	11/14/84	V/T 10	complete
M11	90	27 14.0		112 02.5	05/11/84	11/14/84	V/T 30	complete
M11	90	27 14.0		112 02.5	05/11/84	11/14/84	V/T 70	complete
P6	90	27 14.0		112 02.5	05/11/84	11/14/84	P/T 90	complete
M14	100	30 30.8		114 15.1	05/21/84	06/19/84	V/T 10	complete
P7	7	28 26.0		112 52.5	05/17/84	11/26/84	P/T 7	complete
P10	7	28 46.5		112 16.0	05/18/84	11/25/84	P/T 7	complete

November 1984 - March 1985
 Noviembre 1984 - Marzo 1985

TABLE 1: Instrument Deployments (cont.)
 TABLA 1: Despliegue de Instrumentos (cont.)

Sta-	Water	Depth	Latitude	Longitude	Date	Date	Inst.	Data
	(m)		N	W	Set	Recovered	Inst. Depth	Return
Está-	Profun-	didad	Lat.	Long.	Fecha de	Fecha de	Profundidad	Datos
	(m)		N	O	Despliegue	Recuperación	Inst. de Inst.	Recuperados
P7	7	28 26.0	112 52.5		11/26/84	03/23/85	P/T	7
P8	5	28 34.5	112 46.0		11/27/84	03/10/85	P/T	5
P9	5	28 40.0	112 32.0		11/28/84	03/16/85	P/T	5
P10	7	28 46.5	112 16.0		11/25/84	03/13/85	P/T	7
P11	5	29 33.5	113 33.5		11/30/84	03/21/85	P/T	5
M13	410	29 09.5	112 52.1		12/02/84	03/22/85	V/T	150
M15	500	30 50.1	114 42.0		11/15/84	11/29/84	V/T	150
March 1985 - January 1986								
Marzo 1985 - Enero 1986								
M12	500	28 35.7	112 38.0		03/09/85	03/19/85	V/T	25
M12	500	28 35.7	112 38.0		03/09/85	03/19/85	V/T	150
M12	500	28 35.7	112 38.0		03/09/85	03/19/85	V/T	300
M12	500	28 35.7	112 38.0		03/09/85	03/19/85	V/T	450
P7	7	28 26.0	112 52.5		03/23/85	01/03/86	P/T	7
P8	5	28 34.5	112 46.0		03/12/85	11/05/85	P/T	5
								T not calibrated

TABLE 1: Instrument Deployments (cont.)
 TABLA 1: Despliegue de Instrumentos (cont.)

Sta-	Water	Depth	Latitude	Longitude	Date	Date	Inst.	Data
	(m)		N	W	Set	Recovered	Inst. Depth	Return
Esta-	Profun-	didad	Lat.	Long.	Fecha de	Fecha de	Profundidad	Datos
	(m)		N	O	Despliegue	Recuperación	Inst. de Inst.	Recuperados
P9	5	28 40.0	112 32.0		03/16/85	11/04/85	P/T	5
P10	7	28 46.5	112 16.0		03/13/85	11/03/85	P/T	7
January 1982 - December 1984 Enero 1982 - Diciembre 1984								
S1	0	27 54.0	110 53.0		01/01/82	12/31/84	S	0
S2	0	27 18.0	112 18.0		01/29/82	12/31/84	S	0
								18 day gap: 10/13-10/31/83
								4 day gap: 8/1-8/4/82 5 day gap: 11/17-11/21/83

Abbreviations:
 Abreviaciones:

P:	Pressure	Presión
S:	Sea Level	Nivel del Mar
T:	Temperature	Temperatura
V:	VMCM	VMCM
V*:	Inclinometer	Inolinómetro
V**:	Electromagnetic Current Meter	Correntómetro Electromagnético

TABLE 2: Mooring sites and principle axes
 TABLA 2: Posiciones de los Ancolajes y los Ejes Principales

Mooring	Location	Principal axis (from True North)
Anclaje	Posición	Eje Principal (Norte Verdadero)
M1	Topolobampo	283
M2	Guaymas	324
M3-M8	Guaymas	297
M9	Guaymas Basin	305
M10-M11	Santa Rosalia	331
M12	Southern Sill	291
M13	Northern Sill	317
M14	Delphin Basin	334
M15	San Felipe	304

TABLE 3a: Currents (cm/s): Statistics For Each Deployment
 TABLA 3a: Corrientes (cm/s): Estadísticas Para Cada Despliegue

Sta- Water tion Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Along-Shelf				Cross-Shelf											
					Mean	SD	Max	Min	Mean	SD	Max	Min								
Esto- Profun- ción didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Profundidad Duración de Inst. (días)	(m)	Paralelo a la Costa				Normal a la Costa											
November 1982 - May 1983																				
Noviembre 1982 - Mayo 1983																				
M7 100	13:00 11/18/82	23:00 05/31/83	194.04	10	4.83	21.10	95.00	-73.40	1.26	7.16	29.20	-35.00								
M7 100	15:00 11/18/82	23:00 05/31/83	194.38	70	8.47	15.84	68.00	-30.00	1.49	7.38	25.50	-34.00								
M7 100	13:00 11/18/82	07:00 11/25/82	6.75	75	16.81	15.46	54.00	-4.00	1.46	5.68	15.00	-12.70								
May - November 1983																				
Mayo - Noviembre 1983																				
M1 100	00:00 05/01/83	13:00 11/03/83	85.75	70	14.50	35.14	113.00	-86.20	8.41	20.00	94.10	-57.10								
M7 100	00:00 05/01/83	13:00 11/03/83	85.75	10	8.48	20.44	95.00	-45.00	-1.17	8.11	29.00	-30.00								
M7 100	00:00 05/01/83	23:00 11/30/83	214.00	70	5.54	15.14	78.00	-48.70	1.71	9.08	48.00	-67.00								
M7 100	16:00 05/01/83	13:00 09/29/83	150.88	75	2.08	6.92	32.00	-27.00	5.53	15.13	71.40	-48.30								
M11 86	00:00 05/01/83	23:00 11/30/83	214.00	10	3.18	16.30	53.00	-84.50	.11	5.75	32.50	-22.20								
M11 86	00:00 05/01/83	23:00 09/26/83	148.96	65	-1.96	11.85	49.70	-48.30	-.39	4.42	15.40	-20.00								
November 1983 - May 1984																				
Noviembre 1983 - Mayo 1984																				
M7 100	00:00 11/01/83	21:00 05/10/84	191.00	70	6.02	22.38	115.70	-68.70	2.36	11.70	70.50	-67.00								
M11 90	00:00 11/01/83	23:00 05/31/84	213.00	10	2.21	16.30	42.00	-50.00	-.68	3.91	32.70	-23.40								
M11 90	00:00 11/05/83	02:00 02/12/84	97.00	65	-3.65	26.50	65.00	-91.10	-1.53	9.60	45.40	-47.90								
May - November 1984																				
Mayo - Noviembre 1984																				
M1 100	13:00 05/09/84	00:00 08/01/84	83.46	10	.21	15.93	50.00	-90.00	-3.48	12.31	49.00	-41.00								
M1 100	13:00 05/09/84	00:00 11/12/84	186.83	70	-2.40	17.00	53.00	-70.10	-.98	9.10	29.40	-38.00								
M2 5	00:00 05/12/84	17:00 05/23/84	11.33	5	4.23	3.48	14.30	-1.30	-1.36	.95	1.20	-4.10								
M4 15	00:00 05/07/84	00:00 11/14/84	191.00	5	-1.37	5.58	25.00	-35.70	-.25	1.49	10.70	-9.20								
M4 15	00:00 05/07/84	00:00 11/14/84	145.00	12	-1.54	3.40	7.10	-25.20	-.17	1.49	7.90	-8.70								

TABLE 3a: Currents (cm/s): Statistics For Each Deployment (cont.)
 TABLA 3a: Corrientes (cm/s): Estadísticas Para Cada Despliegue (cont.)

Sta- Water tion Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Along-Shelf				Cross-Shelf			
					Mean	SD	Max	Min	Mean	SD	Max	Min
Esta- Profun- Tiempo de Profundidad	comienzo	Tiempo de Duración	Profundidad	Paralelo a la Costa	Normal a la Costa							
ción dided	(PST)	final	de Inst.	Medio DE Max Min	Medio DE Max Min							
(m)		(PST)	(días)	(m)								
M6 50 13:00 05/10/84 08:00 11/13/84 141.92 10 -3.57 15.88 63.70 -56.90 1.63 5.88 35.40 -27.10												
M6 50 12:00 05/10/84 17:00 11/13/84 187.21 20 -2.60 12.41 63.70 -54.50 .49 5.87 31.50 -26.40												
M8 200 19:00 05/10/84 08:00 11/14/84 187.54 10 2.18 28.95 103.60 -104.10 2.36 14.01 87.30 -67.40												
M9 1000 05:00 05/10/84 11:00 11/13/84 178.25 50 3.74 21.13 60.60 -60.60 -.62 14.34 43.60 -58.00												
M9 1000 08:00 05/10/84 20:00 11/12/84 177.50 300 -2.33 16.35 81.90 -79.90 .84 13.14 55.80 -63.10												
M9 1000 08:00 05/10/84 20:00 11/13/84 178.50 500 -1.49 14.67 60.50 -52.50 -2.13 9.48 48.70 -56.40												
M9 1000 07:00 05/10/84 14:00 11/12/84 177.29 850 .41 13.25 88.60 -63.70 .01 9.61 44.50 -48.90												
M10 200 18:00 05/11/84 19:00 09/09/84 120.64 10 -8.63 19.97 38.40 -84.10 -.26 8.76 37.30 -30.40												
M11 90 08:00 05/01/84 17:00 11/14/84 197.71 10 .68 18.95 46.10 -85.90 .83 6.98 35.10 -25.10												
M11 90 16:00 05/11/84 17:00 11/14/84 187.64 30 -4.35 19.71 59.60 -84.60 -1.09 6.69 32.70 -32.70												
M11 90 16:00 05/11/84 17:00 11/14/84 187.64 70 -3.93 16.07 54.70 -71.10 -1.28 5.31 28.40 -21.10												
M14 100 20:00 05/21/84 08:00 06/09/84 18.50 10 -12.37 25.90 59.20 -63.60 -1.76 13.15 33.30 -36.30												
<i>November 1984 – May 1985</i>												
<i>Noviembre 1984 – Mayo 1985</i>												
M12 500 10:00 03/09/85 21:00 03/19/85 10.46 450 4.19 40.52 105.50 -80.00 .62 11.98 37.80 -50.10												
M13 410 07:00 12/02/84 07:00 03/22/85 110.00 150 -3.75 22.38 56.30 -84.70 -.75 6.98 21.20 -33.30												
M15 500 16:00 11/15/84 22:00 11/29/84 14.25 150 5.88 47.31 126.20 -99.10 -9.29 17.40 28.20 -77.60												
<i>Long Records (filtered)</i>												
M7 100 14:00 11/19/82 12:00 11/02/83 347.88 10 2.77 14.99 70.00 -49.10 .50 3.34 13.50 -14.00												
M7 100 16:00 11/19/82 20:00 05/09/84 537.13 70 6.68 13.66 51.00 -26.60 2.17 3.66 33.20 -12.00												
M11 90 21:00 04/30/83 16:00 11/13/84 562.80 10 1.85 11.29 33.00 -48.20 .15 2.65 14.50 -8.40												

TABLE 3b: Temperature ($^{\circ}$ C): Statistics For Each Deployment
 TABLA 3b: Temperatura ($^{\circ}$ C): Estadísticas Para Cada Despliegue

Sta-	Water	Start	Stop	Duration	Inst.	Mean	SD	Max	Min
Está-	Profun-	Tiempo de	Tiempo de		Profundidad	Medio	DE	Max	Min
ción	didad	Comienzo	final	Duración	de Inst.				
November 1982 - May 1983									
Noviembre 1982 - Mayo 1983									
M7	100	13:00 11/18/82	23:00 05/31/83	194.46	10	21.60	1.48	26.20	18.58
M7	100	15:00 11/18/82	23:00 05/31/83	194.38	70	20.40	2.15	25.93	15.33
M7	100	13:00 11/18/82	07:00 11/28/82	6.75	78	21.02	1.18	22.68	17.95
May - November 1983									
Mayo - Noviembre 1983									
M1	100	11:00 05/17/83	20:00 09/29/83	135.38	10	28.33	1.35	29.86	23.72
M1	100	13:00 05/17/83	19:00 10/16/83	152.25	70	24.46	1.49	29.09	20.00
M1	100	13:00 05/17/83	11:00 11/02/83	168.92	100	19.39	1.94	24.92	14.45
M5	35	10:00 05/01/83	08:00 08/22/83	112.92	10	27.11	3.17	30.95	19.89
M5	35	11:00 05/01/83	12:00 11/03/83	186.04	35	24.48	3.03	28.43	16.76
M7	100	00:00 05/01/83	23:00 11/30/83	214.00	10	27.11	2.99	30.69	18.81
M7	100	00:00 05/01/83	23:00 11/30/83	214.00	70	28.76	4.19	31.05	15.49
M7	100	16:00 05/01/83	13:00 09/29/83	150.88	78	23.85	2.85	30.05	17.38
M11	86	00:00 05/01/83	23:00 11/30/83	214.00	10	26.00	1.89	29.63	20.08
M11	86	00:00 05/01/83	23:00 09/26/83	150.12	65	20.77	2.17	25.15	16.04
M11	86	00:00 05/01/83	13:00 11/03/83	191.79	86	19.94	1.85	24.07	15.61
November 1983 - May 1984									
Noviembre 1983 - Mayo 1984									
M7	100	00:00 11/01/83	17:00 05/10/84	191.71	10	19.04	2.65	27.31	13.67
M7	100	00:00 11/01/83	21:00 05/10/84	191.88	70	17.23	1.79	25.88	13.79
M11	86	00:00 11/01/83	23:00 05/31/84	213.00	10	20.81	2.22	26.66	16.33
M11	86	00:00 11/05/83	02:00 02/12/84	97.08	65	18.97	1.57	23.87	15.17
May - November 1984									

TABLE 3b: Temperature ($^{\circ}$ C): Statistics For Each Deployment (cont.)
 TABLA 3b: Temperatura ($^{\circ}$ C): Estadísticas Para Cada Despliegue (cont.)

Sta- tion Depth (m)	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Esta- ción didad (m)	Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (diás)	Profundidad de Inst. (m)	Medio	DE	Max	Min
Mayo - Noviembre 1984									
M1	100	13:00 05/09/84	00:00 08/01/84	83.46	10	27.39	2.00	29.92	21.31
M1	100	13:00 05/09/84	09:00 11/12/84	186.83	70	19.79	2.58	27.39	13.58
M1	100	14:00 05/09/84	10:00 11/12/84	186.83	100	15.88	1.59	23.65	12.46
M2	5	09:00 05/12/84	17:00 05/23/84	11.33	1	25.49	.67	27.23	23.91
M2	5	09:00 05/12/84	17:00 05/23/84	11.33	3	25.28	.70	27.11	23.33
M2	5	09:00 05/12/84	17:00 05/23/84	11.33	4	25.07	.68	26.88	22.71
M2	5	09:00 05/12/84	17:00 05/23/84	11.33	5	24.87	.66	26.61	22.16
M3	8	19:00 05/20/84	10:00 11/14/84	63.42	8	27.07	2.71	30.21	18.10
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	2	28.45	2.27	31.20	20.08
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	4	28.14	2.48	31.23	19.10
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	6	28.07	2.51	31.18	18.18
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	8	27.95	2.57	31.11	17.81
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	10	27.85	2.64	30.97	16.85
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	12	27.66	2.71	30.83	16.97
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	14	27.50	2.82	30.80	15.46
M6	50	12:00 05/10/84	17:00 11/13/84	187.17	10	28.00	2.44	30.77	18.96
M6	50	12:00 05/10/84	17:00 11/13/84	187.21	20	27.33	2.80	30.46	17.48
M6	50	12:00 05/10/84	17:00 11/13/84	187.25	30	26.50	3.33	30.41	16.35
M7	100	17:00 05/10/84	23:00 11/30/84	204.29	100	14.16	1.90	29.02	10.58
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	10	28.18	2.84	31.46	19.27
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	20	27.47	3.21	31.10	17.75
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	30	26.27	3.48	30.81	16.91
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	40	24.58	3.51	30.72	16.54
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	50	22.70	3.27	30.39	15.96

TABLE 3b: Temperature (°C): Statistics For Each Deployment (cont.)
 TABLA 3b: Temperatura (°C): Estadísticas Para Cada Despliegue (cont.)

Sta- tion	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Está- ción	Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (diás)	Profundidad de Inst. (m)	Medio	DE	Max	Min
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	60	20.74	2.99	28.89	13.98
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	70	19.23	2.54	28.63	13.63
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	85	17.62	2.02	28.35	13.33
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	100	15.65	2.20	26.34	10.13
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	115	15.18	1.82	22.73	11.74
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	130	14.90	1.20	20.49	12.05
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	145	14.24	1.06	19.70	11.72
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	160	13.64	.99	18.60	11.24
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	175	13.12	.90	17.73	10.89
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	200	13.13	.62	16.31	11.54
M9	1000	05:00 05/19/84	11:00 11/13/84	178.25	50	22.23	2.49	27.70	16.69
M9	1000	06:00 05/19/84	05:00 09/07/84	110.98	100	16.73	.98	19.52	14.45
M9	1000	08:00 05/19/84	20:00 11/12/84	177.50	300	11.73	.28	12.64	10.80
M9	1000	08:00 05/19/84	20:00 11/13/84	178.50	500	8.77	.60	9.93	7.51
M9	1000	07:00 05/19/84	14:00 11/12/84	177.29	850	5.38	.16	5.89	4.93
M10	200	18:00 05/11/84	18:00 11/14/84	187.08	10	25.89	2.81	29.91	17.11
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	10	22.04	2.36	26.79	17.11
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	20	20.37	2.21	25.78	16.51
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	30	19.20	2.03	24.29	16.01
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	40	18.47	1.89	22.90	15.71
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	50	17.84	1.76	22.58	15.35
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	60	17.35	1.65	21.95	15.11
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	70	16.96	1.53	20.97	14.88
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	85	16.50	1.37	19.83	14.53
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	100	16.04	1.26	19.02	14.18

TABLE 3b: Temperature ($^{\circ}$ C): Statistics For Each Deployment (cont.)
 TABLA 3b: Temperatura ($^{\circ}$ C): Estadísticas Para Cada Despliegue (cont.)

Sta- tion	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Esta- ción	Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Medio	DE	Max	Min
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	115	15.68	1.05	18.66	14.04
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	130	15.29	.88	18.16	13.68
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	145	14.98	.74	17.49	13.37
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	160	14.63	.66	16.84	13.20
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	175	14.32	.59	16.30	12.93
M11	90	00:00 05/01/84	17:00 11/14/84	197.71	10	24.84	2.67	28.80	16.33
M11	90	16:00 05/11/84	17:00 11/14/84	187.04	30	23.07	3.11	29.26	15.60
M11	90	16:00 05/11/84	17:00 11/14/84	187.04	70	19.35	2.28	24.66	14.63
M11	90	17:00 05/11/84	18:00 11/14/84	187.04	90	17.74	1.78	22.54	13.97
M14	100	20:00 05/21/84	17:00 06/19/84	28.88	10	23.07	1.02	25.28	18.74
P7	7	15:00 05/17/84	23:00 11/30/84	197.38	7	22.01	3.26	26.54	13.11
P10	7	15:00 05/18/84	23:00 11/30/84	196.38	7	27.44	3.67	31.05	16.48
November 1984 - May 1985									
Noviembre 1984 - Mayo 1985									
M7	100	00:00 11/01/84	23:00 08/31/85	196.42	100	10.90	1.05	14.39	8.70
M13	410	08:00 12/02/84	06:00 03/22/85	109.92	150	13.16	.41	14.91	11.77
M15	500	16:00 11/15/84	22:00 11/29/84	14.25	150	13.58	.68	15.99	10.28
P7	7	00:00 11/01/84	23:00 05/31/85	212.00	7	15.70	2.02	21.99	13.20
P8	5	09:00 11/27/84	12:00 03/10/85	103.12	8	15.72	1.44	19.83	13.18
P9	5	08:00 11/28/84	23:00 05/31/85	184.67	8	15.06	1.36	22.57	12.36
P10	7	00:00 11/01/84	23:00 05/31/85	212.00	7	18.16	3.17	25.33	13.75
P11	5	05:00 12/01/84	08:00 03/21/85	110.12	5	15.57	1.60	20.03	13.40
May - November 1985									
Mayo - Noviembre 1985									
M7	100	00:00 05/01/85	10:00 05/16/85	15.42	100	10.16	1.18	13.23	8.70

TABLE 3b: Temperature ($^{\circ}$ C): Statistics For Each Deployment (cont.)
 TABLA 3b: Temperatura ($^{\circ}$ C): Estadísticas Para Cada Despliegue (cont.)

Sta- tion	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Está- ción	Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (diás)	Profundidad de Inst. (m)	Medio	DE	Max	Min
M12	500	12:00 03/09/85	13:00 03/23/85	14.08	25	11.66	.41	12.44	10.16
M12	500	12:00 03/09/85	13:00 03/23/85	14.08	180	10.98	.42	11.93	9.62
M12	500	12:00 03/09/85	13:00 03/23/85	14.04	480	8.97	.63	10.80	7.81
P7	7	00:00 05/01/85	23:00 11/30/85	214.00	7	21.13	3.95	28.84	13.71
P9	5	00:00 05/01/85	06:00 11/04/85	187.25	5	23.30	5.00	30.01	13.42
P10	7	00:00 05/01/85	09:00 11/03/85	186.38	7	27.43	2.88	31.16	20.70
November - December 1985									
Noviembre - Diciembre 1985									
P7	7	00:00 11/01/85	05:00 12/21/85	80.21	7	18.58	2.18	23.42	14.50
Long records (filtered)									
M7	100	14:00 11/19/82	16:00 05/09/84	537.08	10	22.71	4.39	30.82	14.20
M7	100	16:00 11/19/82	20:00 05/09/84	537.17	70	21.44	4.77	30.63	14.46
M11	90	21:00 04/30/83	16:00 11/13/84	562.79	10	23.98	3.19	29.30	17.40
P7	7	18:00 05/18/84	04:00 12/20/85	580.50	7	19.72	4.21	27.54	13.61
P9	5	09:00 11/29/84	05:00 11/03/85	340.92	5	19.53	5.55	29.20	12.84
P10	7	16:00 05/19/84	08:00 11/02/85	531.67	7	24.43	5.70	30.92	14.00

TABLE 30: Pressure (mbars): Statistics For Each Deployment
 TABLA 30: Presión (mbars): Estadísticas Para Cada Despliegue

Sta- tion Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Esta- ción Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (diás)	Profundidad de Inst. (m)	DE	Max	Min
May - November 1983							
Mayo - Noviembre 1983							
P1 100 14:00 05/17/83	10:00 11/01/83	166.83	100	6.18	12.61	-12.69	
P3 35 12:00 05/02/83	11:00 11/02/83	183.96	35	8.50	19.90	-20.50	
P6 86 23:00 04/30/83	11:00 11/02/83	185.50	86	4.78	7.83	-12.17	
May - November 1984							
Mayo - Noviembre 1984							
P1 100 18:00 05/10/84	08:00 11/11/84	184.71	100	3.69	9.09	-8.71	
P4 100 21:00 05/11/84	23:00 11/30/84	204.17	100	3.50	14.50	-7.10	
P5 200 20:00 05/11/84	07:00 11/13/84	187.54	200	2.30	5.37	-6.33	
P6 90 18:00 05/12/84	17:00 11/13/84	184.96	90	2.83	6.20	-7.80	
P7 7 16:00 05/17/84	23:00 11/30/84	196.33	7	7.22	18.73	-18.87	
P10 7 16:00 05/18/84	23:00 11/30/84	195.33	7	8.04	23.82	-16.38	
November 1984 - May 1985							
Noviembre 1984 - Mayo 1985							
P4 100 00:00 11/01/84	10:00 05/25/85	206.46	100	2.63	6.71	-5.79	
P7 7 00:00 11/01/84	23:00 05/31/85	212.00	7	2.77	7.67	-6.93	
P8 5 10:00 11/28/84	23:00 05/31/85	184.58	5	2.65	7.10	-5.90	
P9 5 09:00 11/29/84	23:00 05/31/85	183.63	5	2.78	7.17	-7.23	
P10 7 00:00 11/01/84	23:00 05/31/85	212.00	7	4.50	12.33	-9.27	
P11 5 14:00 12/01/84	08:00 03/20/85	110.83	5	2.18	4.63	-16.47	
May - November 1985							
Mayo - Noviembre 1985							
P7 7 00:00 05/01/85	23:00 11/30/85	214.00	7	6.38	13.38	-13.82	
P8 5 00:00 05/01/85	03:00 11/04/85	187.13	5	7.60	16.20	-17.80	

TABLE 3c: Pressure (mbars): Statistics For Each Deployment (cont.)
 TABLA 3c: Presión (mbars): Estadísticas Para Cada Despliegue (cont.)

Sta- tion (m)	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Esta- ción (m)	Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (diás)	Profundidad de Inst. (m)	DE	Max	Min
Long records								
P9	5	00:00 08/01/85	20:00 11/02/85	185.83	5	7.03	14.34	-15.16
P10	7	00:00 08/01/85	23:00 11/02/85	184.96	7	9.78	14.18	-23.32
P4	100	21:00 08/11/84	10:00 08/25/85	380.63	100	3.03	14.39	-7.21
P7	7	16:00 08/18/84	03:00 01/03/86	593.46	7	7.84	22.04	-15.56
P8	5	10:00 11/28/84	03:00 11/04/85	340.71	5	9.32	22.77	-13.43
P9	5	09:00 11/29/84	20:00 11/02/85	338.46	5	8.31	20.00	-13.70
P10	7	16:00 08/19/84	23:00 11/01/85	531.29	7	11.13	24.39	-18.81

TABLE 3d: Sea Level (cms): Statistics For Each Deployment
 TABLA 3d: Nivel del Mar (cms): Estadísticas Para Cada Despliegue

sta- ción	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
sta- ción	Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Profundidad Duración (diás)	de Inst. (m)	DE	Max	Min
November 1982 - May 1983								
1	0	00:00 11/01/82	23:00 05/31/83	211.00	0	11.48	35.50	-27.80
2	0	00:00 11/01/82	23:00 05/31/83	211.00	0	8.12	21.20	-18.20
ay - November 1983								
1	0	00:00 05/01/83	23:00 11/30/83	213.00	0	13.09	35.60	-19.70
2	0	00:00 05/01/83	23:00 11/30/83	213.00	0	8.41	25.30	-10.80
ovember 1983 - May 1984								
1	0	00:00 11/01/83	23:00 05/31/84	212.00	0	6.80	8.00	-27.10
2	0	00:00 11/01/83	23:00 05/31/84	212.00	0	5.40	7.10	-20.20
ay - November 1984								
1	0	00:00 05/01/84	23:00 11/30/84	213.00	0	12.40	28.80	-29.40
2	0	00:00 05/01/84	23:00 11/30/84	213.00	0	10.14	19.30	-25.30

TABLE 3d: Sea Level (cms): Statistics For Each Deployment
 TABLA 3d: Nivel del Mar (cms): Estadisticas Para Cada Despliegue

Sta- tion Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Esta- ción Profun- idad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Profundidad Duración de Inst. (diás) (m)	DE		Max	Min
November 1982 - May 1983							
Noviembre 1982 - Mayo 1983							
S1 0 00:00 11/01/82	23:00 05/31/83	211.00	0	11.48	35.50	-27.80	
S2 0 00:00 11/01/82	23:00 05/31/83	211.00	0	8.12	21.20	-18.20	
May - November 1983							
Mayo - Noviembre 1983							
S1 0 00:00 05/01/83	23:00 11/30/83	213.00	0	13.09	35.60	-19.70	
S2 0 00:00 05/01/83	23:00 11/30/83	213.00	0	8.41	25.30	-10.80	
November 1983 - May 1984							
Noviembre 1983 - Mayo 1984							
S1 0 00:00 11/01/83	23:00 05/31/84	212.00	0	6.80	8.00	-27.10	
S2 0 00:00 11/01/83	23:00 05/31/84	212.00	0	5.40	7.10	-20.20	
May - November 1984							
Mayo - Noviembre 1984							
S1 0 00:00 05/01/84	23:00 11/30/84	213.00	0	12.40	28.80	-29.40	
S2 0 00:00 05/01/84	23:00 11/30/84	213.00	0	10.14	19.30	-25.30	

TABLE 4a: Currents (cm/s): Statistics For Common Time Period, Main Deployment
 TABLA 4a: Corrientes (cm/s): Estadísticas Para Un Intervalo Común, Despliegue Principal

Sta- Water tion Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Along-Shelf					Cross-Shelf				
					Mean	SD	Max	Min	Mean	SD	Max	Min	Mean	SD
Este- Profun- ción (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Profundidad Duración (días)	de Inst. (m)	Paralelo a la Costa					Normal a la Costa				
M1	100	19:00 05/20/84	09:00 11/12/84	175.58	70	-2.24	17.54	53.80	-70.10	-1.07	9.87	29.40	-38.60	
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	5	-1.24	5.16	20.70	-28.80	-2.23	1.41	10.70	-7.80	
M6	50	19:00 05/20/84	09:00 11/12/84	175.58	20	-2.65	12.48	63.70	-54.50	.55	4.88	31.50	-26.30	
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	10	.93	29.22	103.60	-104.10	2.61	14.19	87.30	-87.40	
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	50	3.78	21.25	60.60	-60.80	-.65	14.43	43.60	-58.00	
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	300	-2.38	16.40	81.90	-79.90	-.05	13.82	55.60	-83.10	
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	500	-1.52	14.74	68.50	-52.50	-2.14	9.52	48.70	-56.40	
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	850	.38	13.31	88.60	-63.70	-.05	9.63	44.50	-48.90	
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	10	-.22	19.39	48.10	-65.90	.98	7.13	35.10	-25.10	
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	30	-4.81	19.37	53.50	-84.60	-1.11	6.61	32.70	-32.70	
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	70	-4.14	18.32	54.70	-71.10	-1.32	5.34	20.40	-21.10	

TABLE 4b: Temperature ($^{\circ}$ C): Statistics For Common Time Period, Main Deployment
 TABLA 4b: Temperatura ($^{\circ}$ C): Estadísticas Para Un Intervalo Común, Despliegue Principal

Sta- tion Depth (m)	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Esta- ción Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)		Profundidad Duración de Inst. (diás)	Medio	DE		Max	Min
M1	100	19:00 05/20/84	09:00 11/12/84	175.58	10	20.05	2.43	27.39	13.58
M1	100	19:00 05/20/84	09:00 11/12/84	175.58	70	16.01	1.55	23.65	12.46
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	2	28.79	1.98	31.20	20.08
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	4	28.51	2.17	31.23	19.10
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	6	28.46	2.19	31.18	18.18
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	8	28.34	2.24	31.11	17.86
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	10	28.25	2.29	30.97	17.44
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	12	28.08	2.35	30.83	16.97
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	14	27.93	2.44	30.80	16.71
M6	50	19:00 05/20/84	09:00 11/12/84	175.58	10	28.27	2.24	30.77	18.96
M6	50	19:00 05/20/84	09:00 11/12/84	175.58	20	27.64	2.56	30.46	17.48
M6	50	19:00 05/20/84	09:00 11/12/84	175.58	30	26.87	3.04	30.41	16.35
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	10	28.53	2.54	31.46	19.27
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	20	27.87	2.87	31.10	17.75
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	30	26.69	3.18	30.81	16.91
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	40	24.99	3.25	30.72	16.54
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	50	23.04	3.09	30.39	15.96
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	60	21.03	2.85	28.89	13.98
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	70	19.45	2.47	28.63	13.63
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	85	17.77	2.00	28.35	13.33
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	100	15.83	2.15	26.34	10.13
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	115	15.29	1.50	22.73	11.74
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	130	14.98	1.19	20.49	12.05
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	145	14.32	1.04	19.70	11.72
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	160	13.71	.97	18.60	11.24

TABLE 4b: Temperature (°C): Statistics For Common Time Period, Main Deployment (cont.)
 TABLA 4b: Temperatura (°C): Estadísticas Para Un Intervalo Común, Despliegue Principal (cont.)

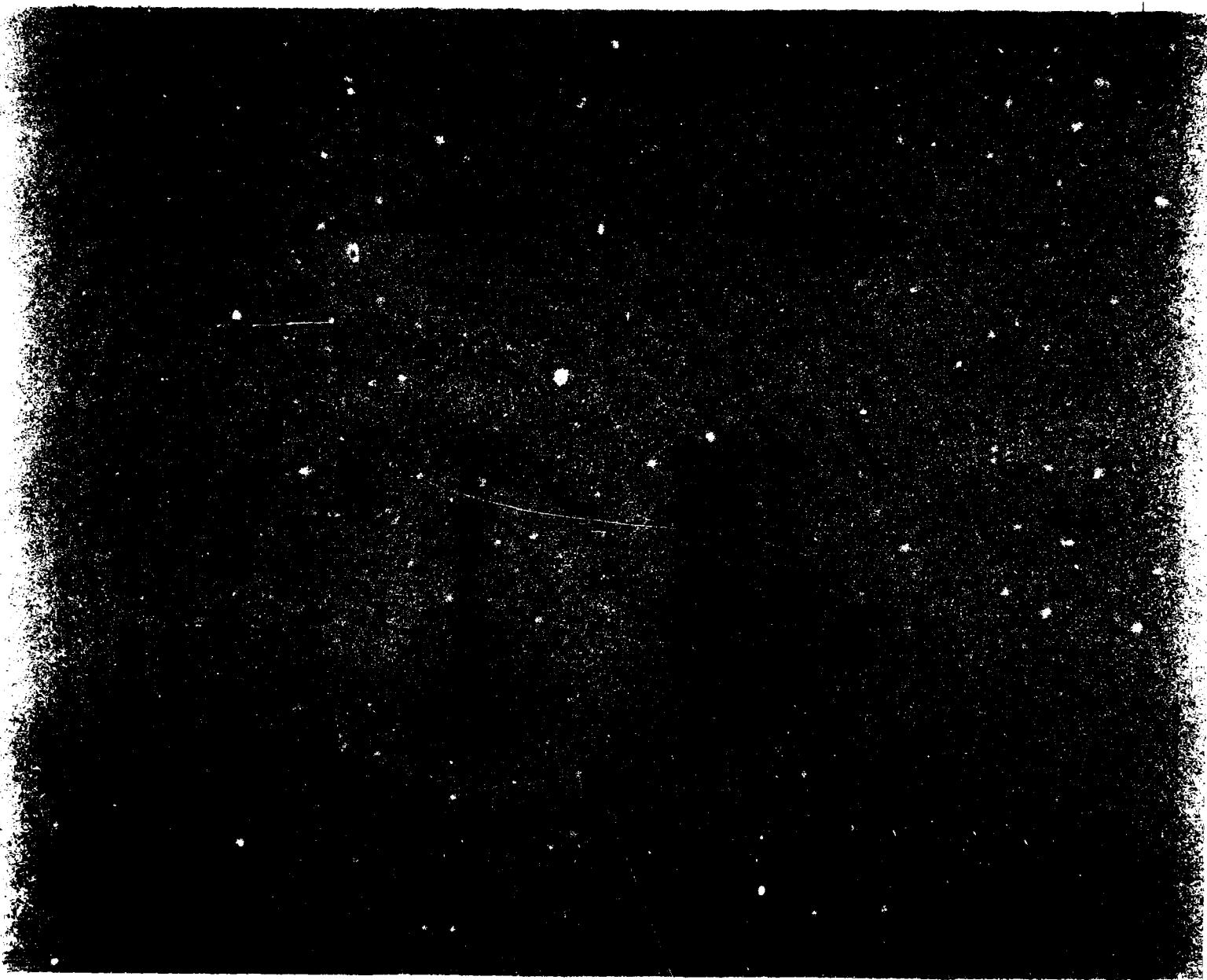
Sta- tion Depth (m)	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Esta- ción	Profun- dad	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Medio	DE	Max	Min
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	175	13.18	.88	17.73	10.89
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	200	13.18	.61	16.31	11.54
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	50	22.29	2.46	27.70	16.86
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	300	11.73	.28	12.64	10.80
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	500	8.77	.60	9.93	7.51
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	850	5.38	.18	5.89	4.93
M10	200	19:00 05/20/84	09:00 11/12/84	175.58	10	26.27	2.40	29.91	17.89
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	10	25.39	2.22	28.80	17.50
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	30	23.41	2.81	29.26	16.37
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	70	19.60	2.11	24.66	14.63
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	90	17.93	1.65	22.54	13.97
P7	7	19:00 05/20/84	09:00 11/12/84	175.58	7	28.38	2.49	31.05	18.37
P10	7	19:00 05/20/84	09:00 11/12/84	175.58	7	22.44	3.10	26.54	13.56

TABLE 4c: Pressure (mbars): Statistics For Common Time Period, Main Deployment
 TABLA 4c: Presión (mbars): Estadísticas Para Un Intervalo Común, Despliegue Principal

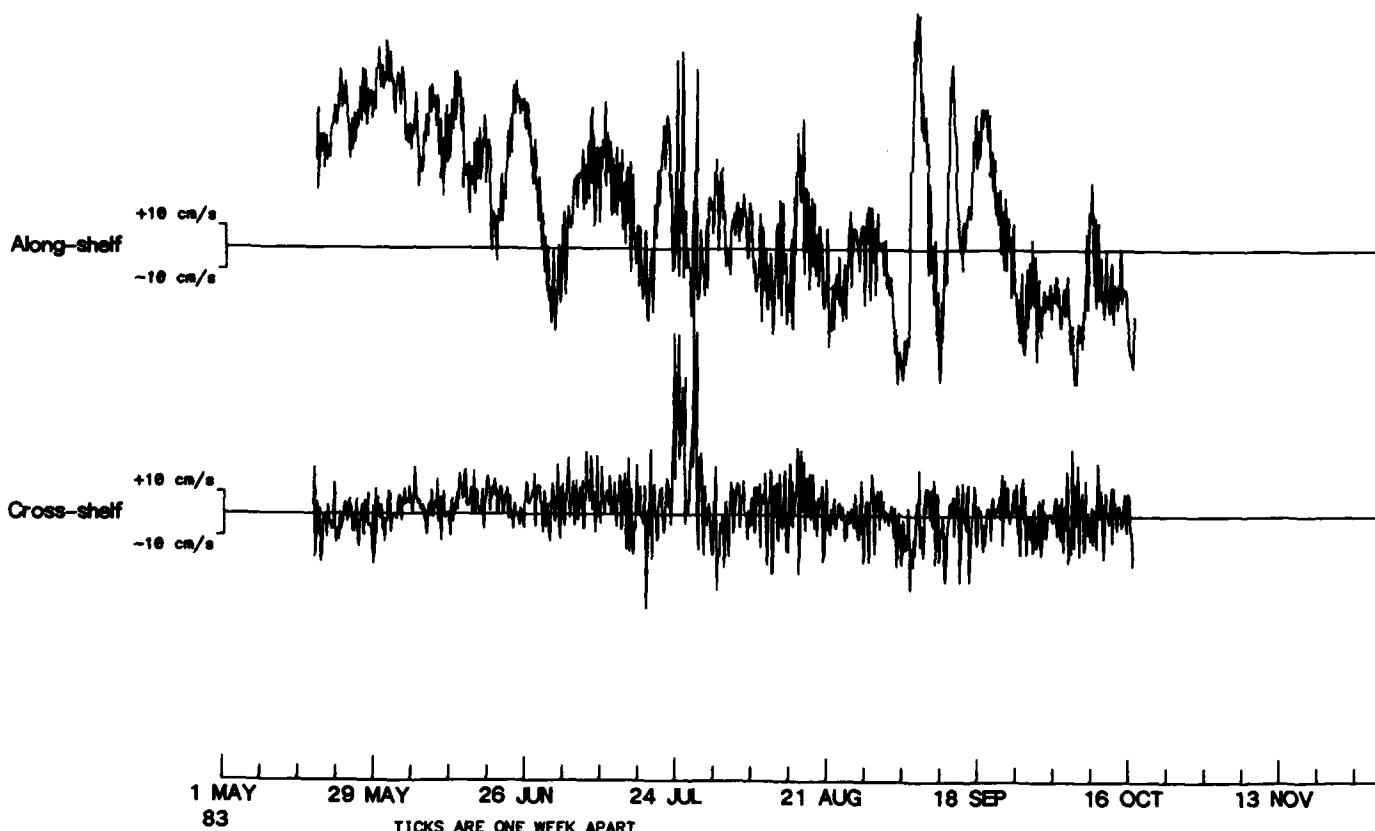
Sta- tion	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Está- ción	Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	DE	Max	Min
P1	100	19:00 05/20/84	09:00 11/12/84	175.58	100	3.76	9.04	-8.76
P4	100	19:00 05/20/84	09:00 11/12/84	175.58	100	3.43	14.00	-7.60
P5	200	19:00 05/20/84	09:00 11/12/84	175.58	200	2.29	4.90	-6.30
P6	90	19:00 05/20/84	09:00 11/12/84	175.58	90	2.88	6.17	-7.83
P7	7	19:00 05/20/84	09:00 11/12/84	175.58	7	6.43	17.43	-20.17
P10	7	19:00 05/20/84	09:00 11/12/84	175.58	7	7.18	22.44	-17.26

TABLE 4d: Sea Level (cms): Statistics For Common Time Period, Main Deployment
 TABLA 4d: Nivel Del Mar (cms): Estadísticas Para Un Intervalo Común, Despliegue Principal

Sta- tion	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Esta- ción	Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	DE	Max	Min
S1	0	19:00 05/20/84	09:00 11/12/84	175.58	0	9.10	28.80	-20.20
S2	0	19:00 05/20/84	09:00 11/12/84	175.58	0	7.49	19.30	-11.10

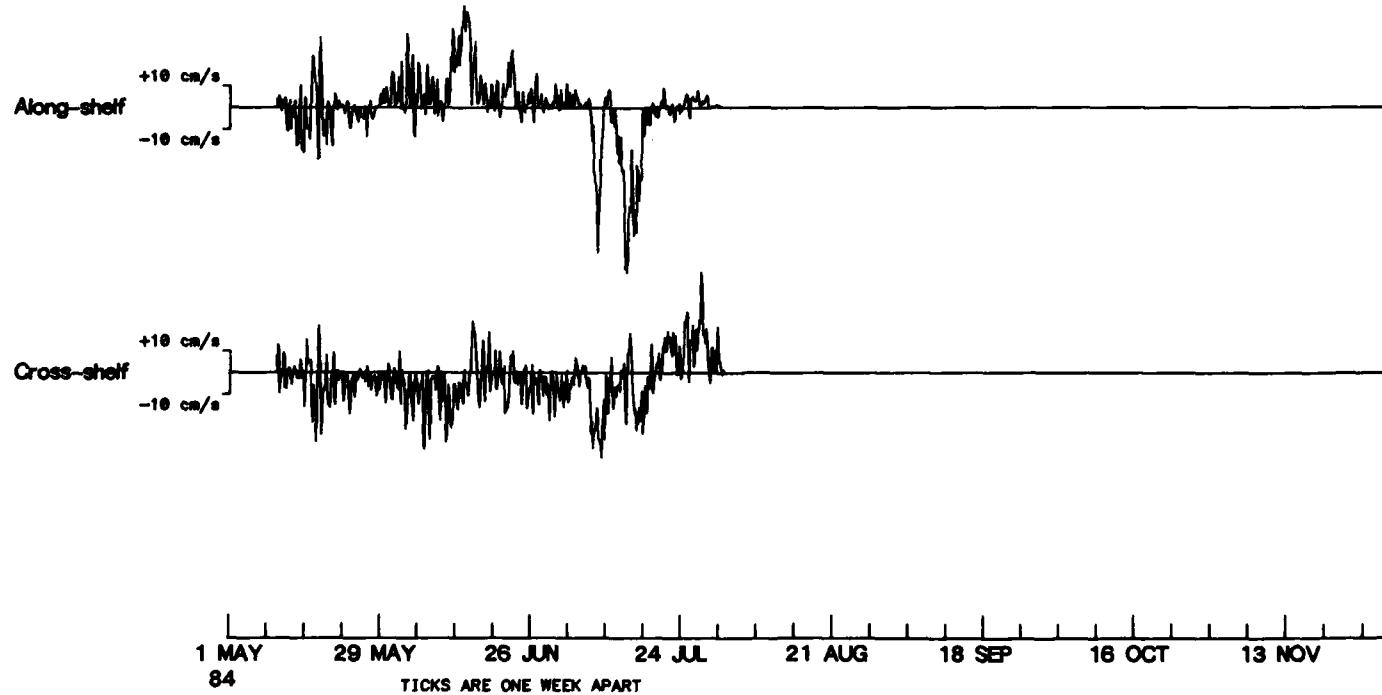


M1 : CURRENTS
depth = 70m May - Nov 83

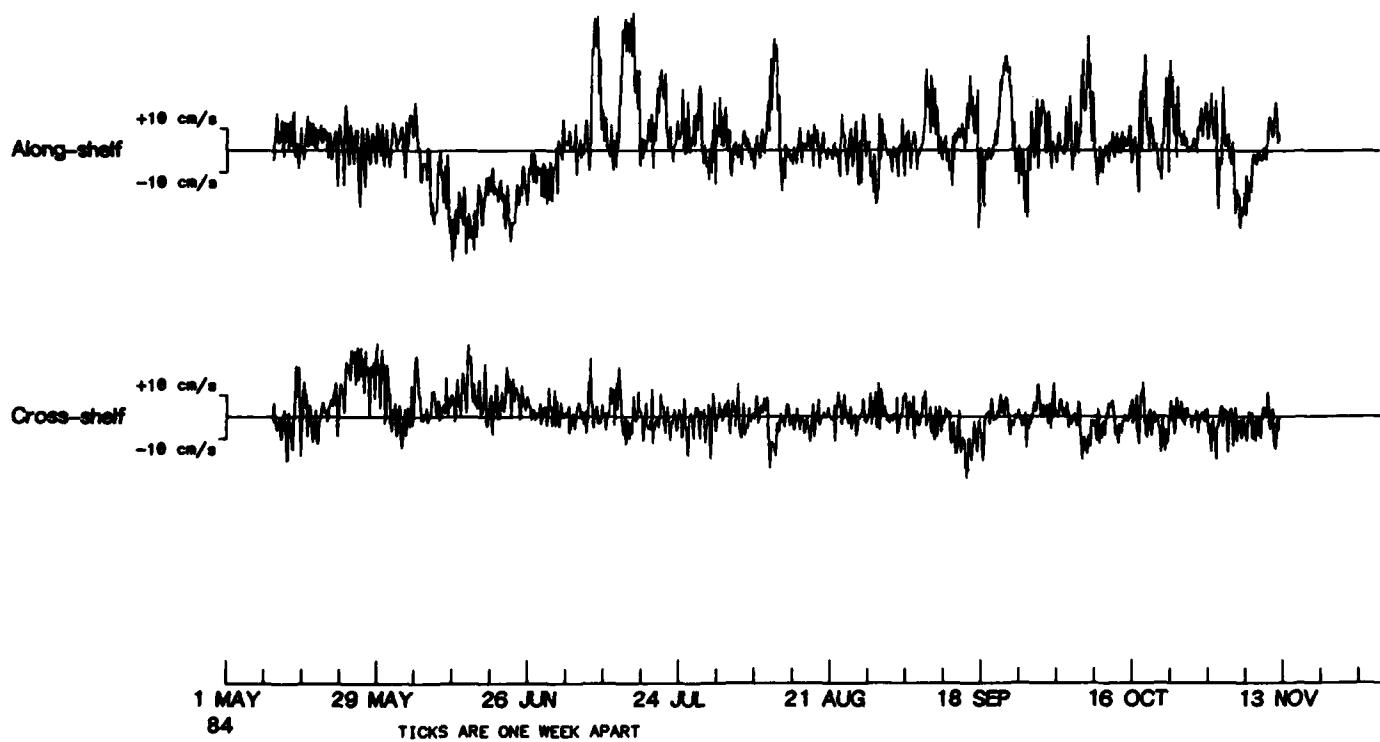


40/-41-

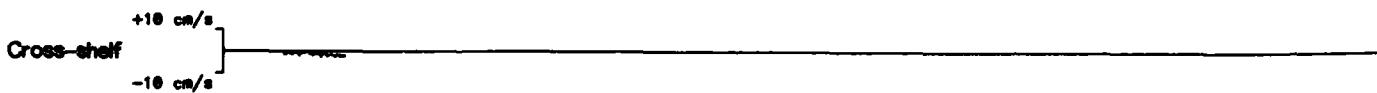
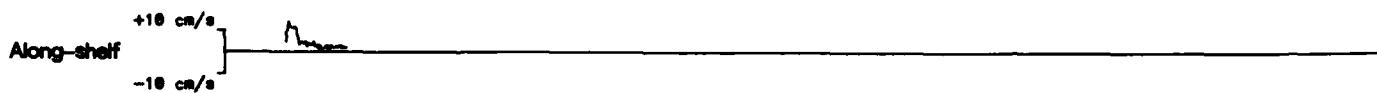
M1 : CURRENTS
depth = 10m May - Nov 84



M1 : CURRENTS
depth = 70m May - Nov 84

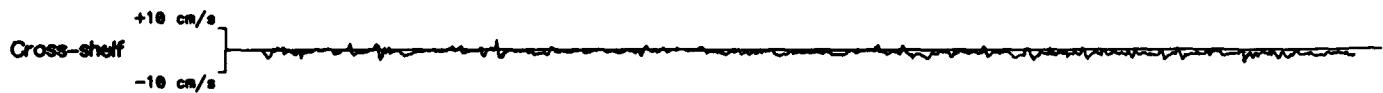
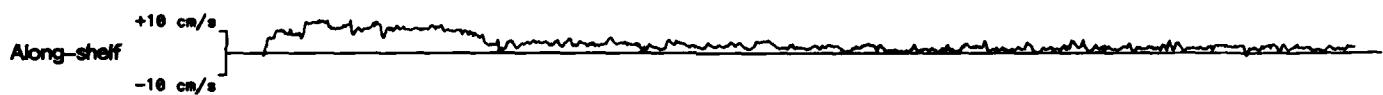


M2 : CURRENTS
depth = 5m May - Nov 84



1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84 TICKS ARE ONE WEEK APART

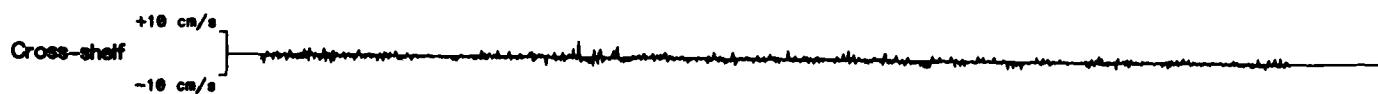
M2 : CURRENTS
depth = 5m May 84



12 MAY 84 19 MAY

TICKS ARE ONE DAY APART

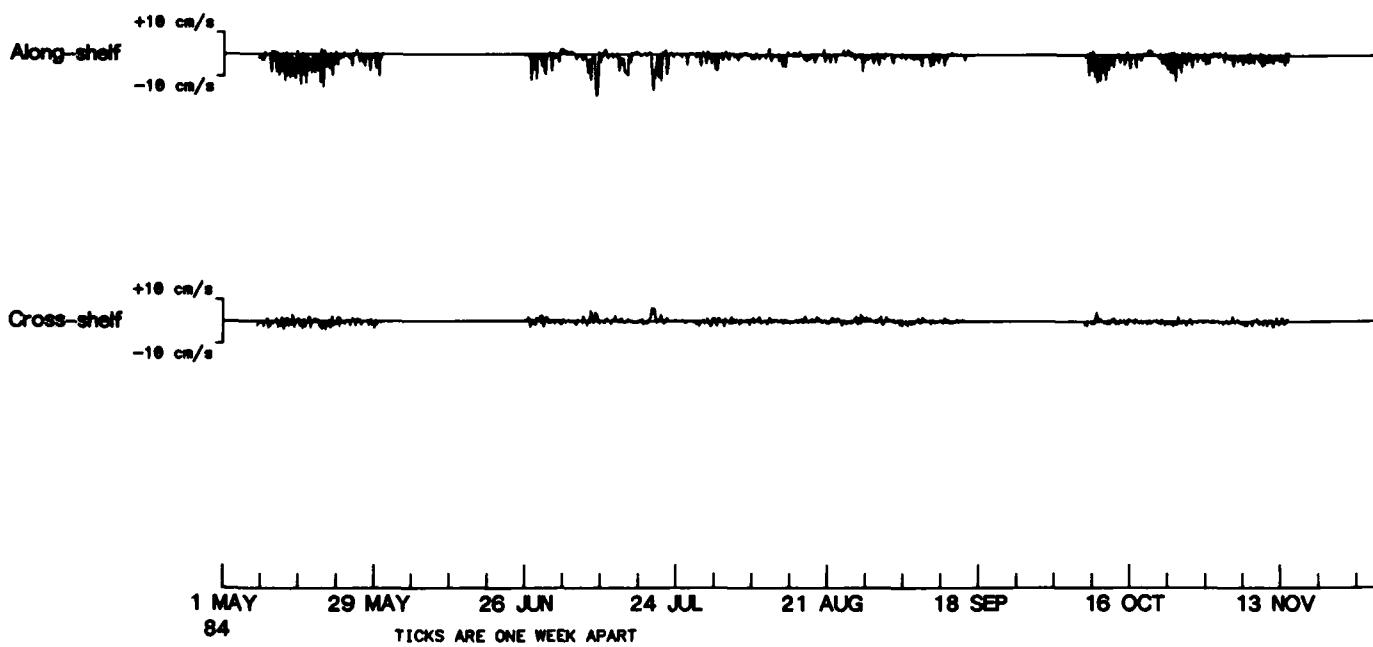
M4 : CURRENTS
depth = 5m May - Nov 84



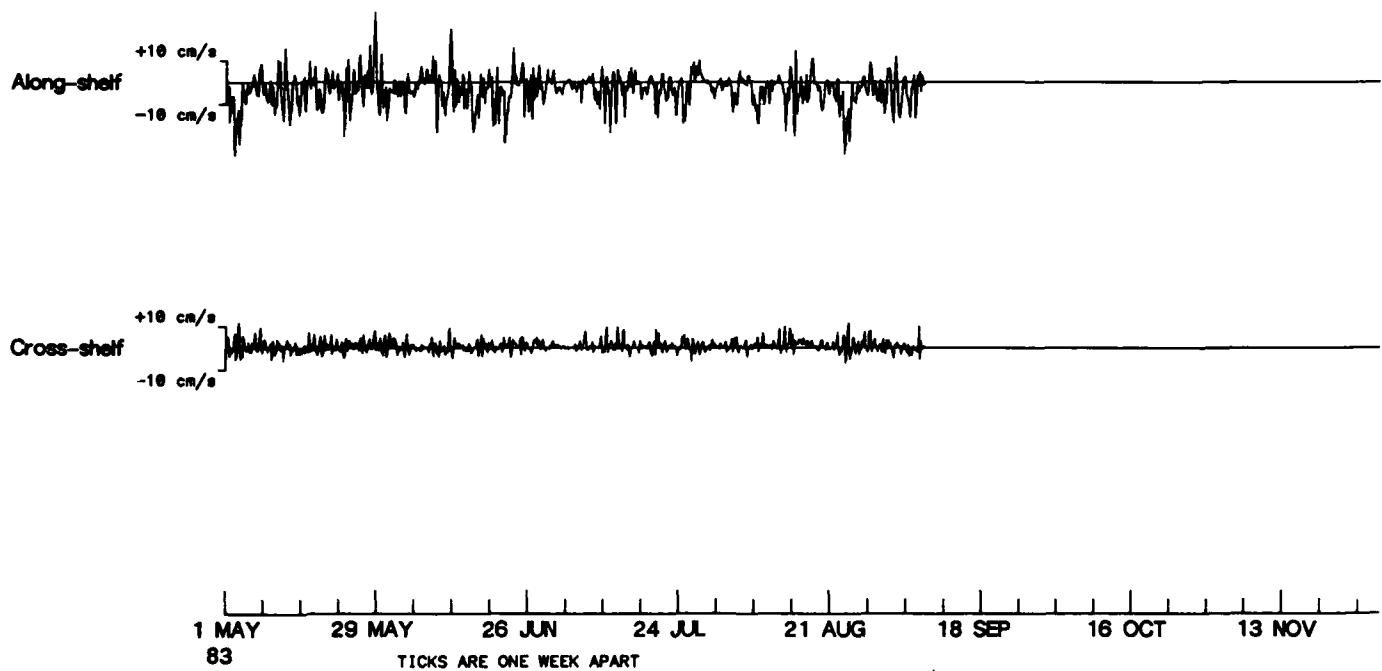
1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84

TICKS ARE ONE WEEK APART

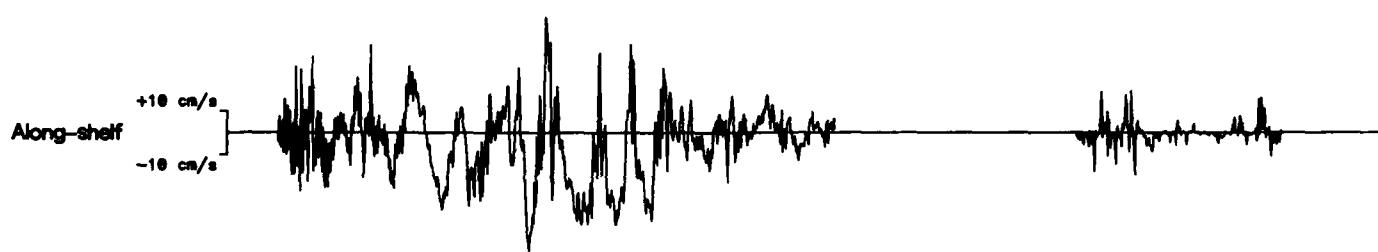
M4 : CURRENTS
depth = 12m May - Nov 84



M5 : CURRENTS
depth = 10m May - Nov 83



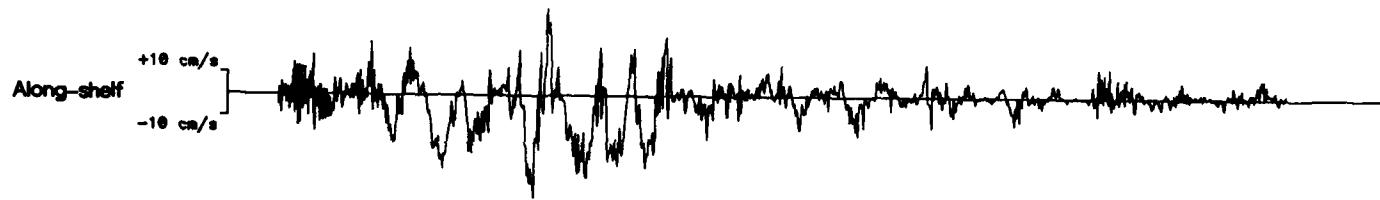
M6 : CURRENTS
depth = 10m May - Nov 84



1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84

TICKS ARE ONE WEEK APART

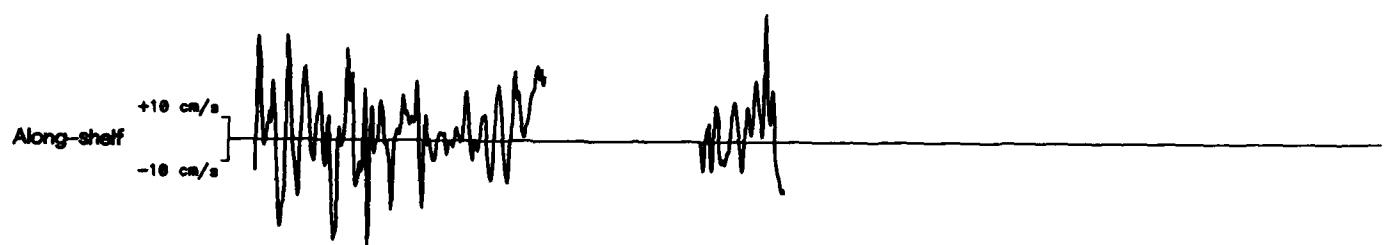
M6 : CURRENTS
depth = 20m May - Nov 84



1 MAY 84 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV

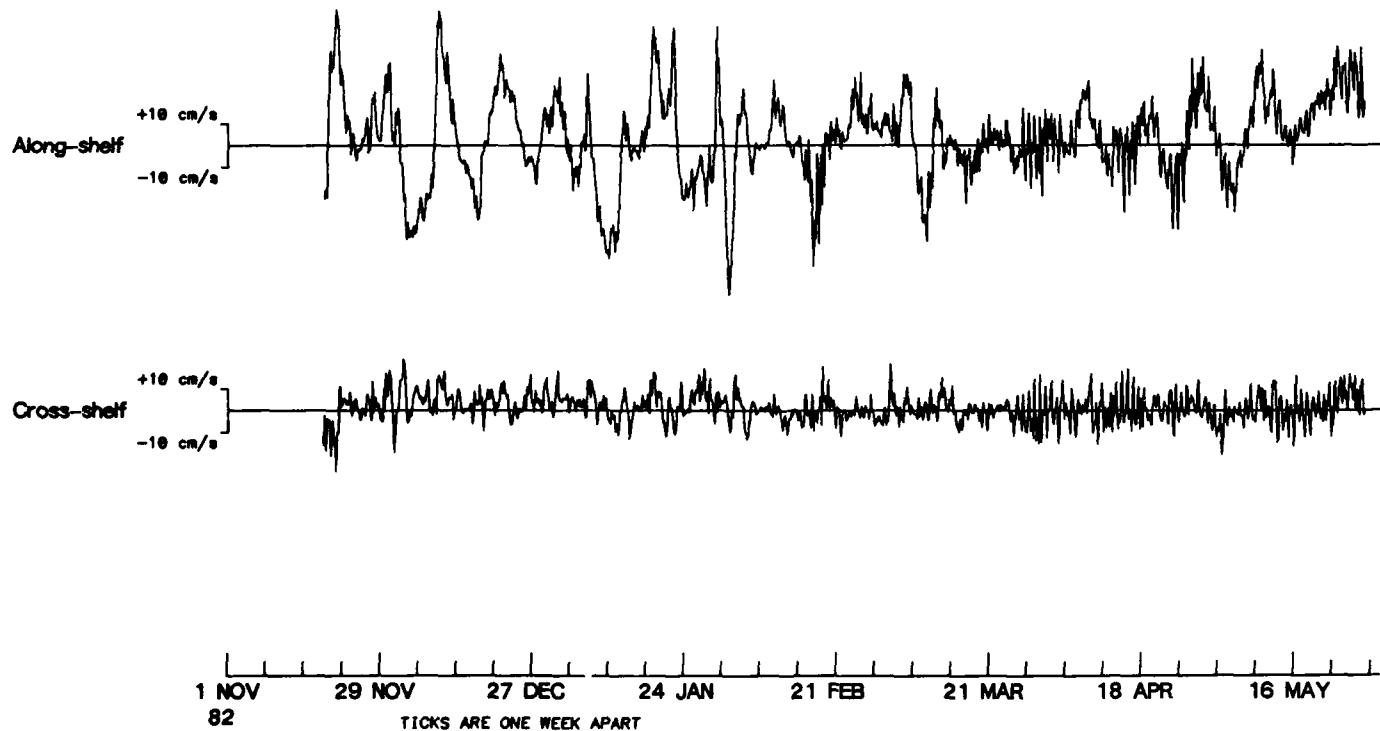
TICKS ARE ONE WEEK APART

M7 : LOW FREQUENCY CURRENTS
depth = 10m Nov 82 - Nov 84

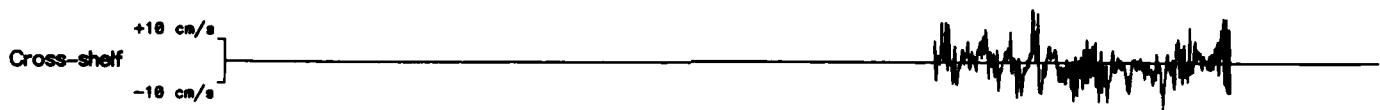


NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV
82 83 84

M7 : CURRENTS
depth = 10m Nov 82 - May 83

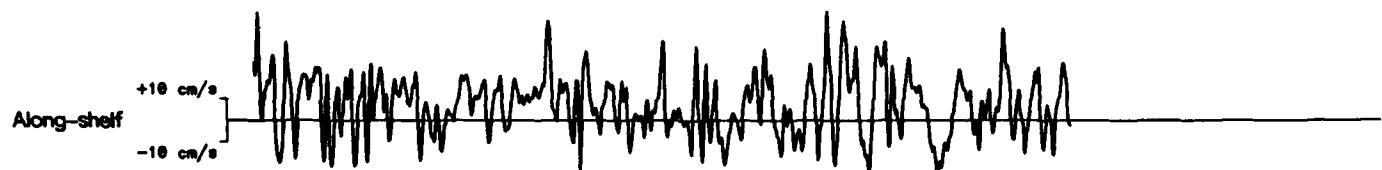


M7 : CURRENTS



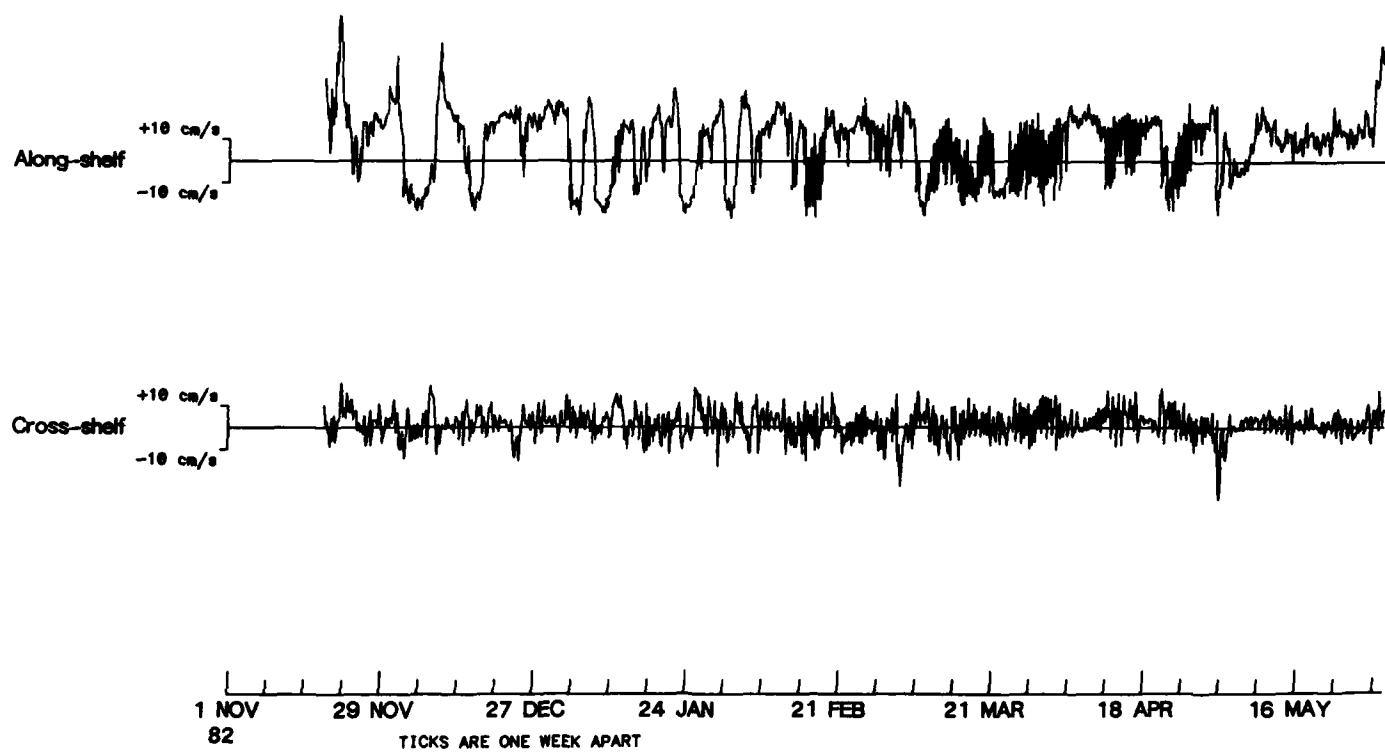
1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
83 TICKS ARE ONE WEEK APART

M7 : LOW FREQUENCY CURRENTS
depth = 70m Nov 82 - Nov 84

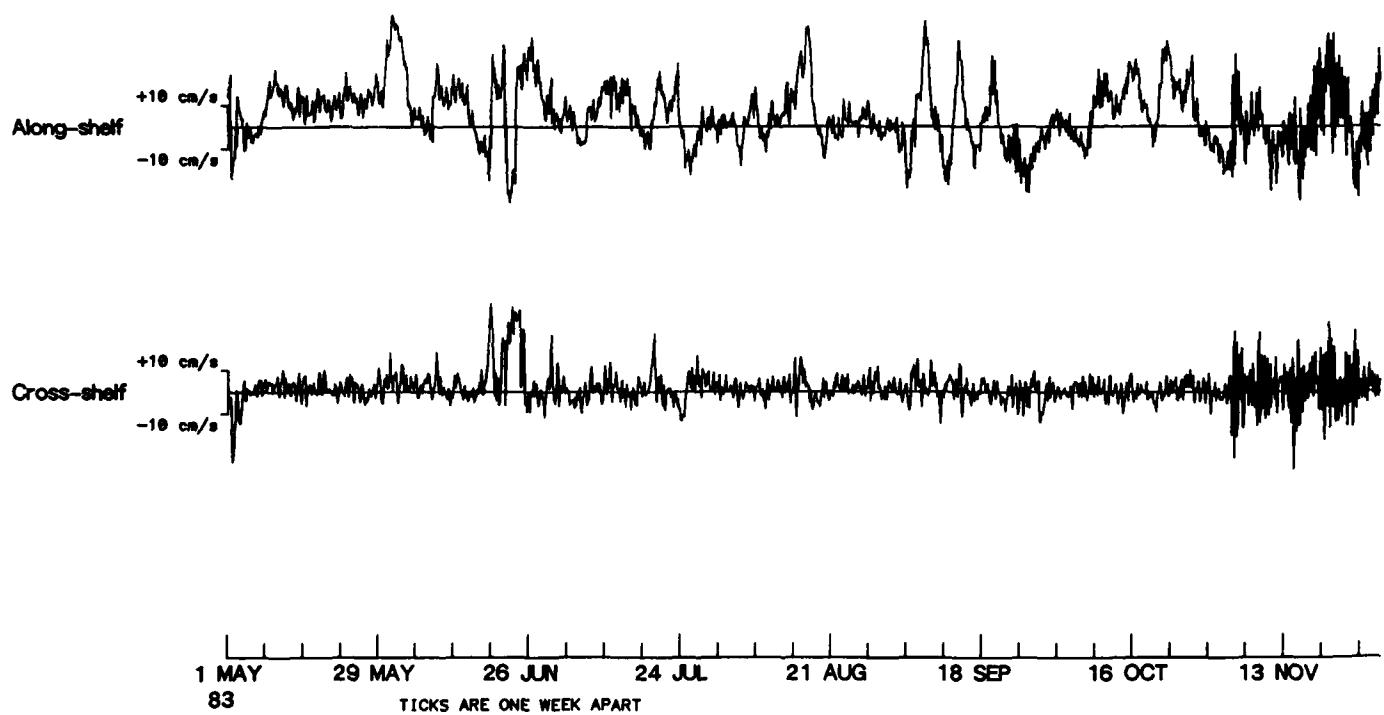


NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV
82 83 84

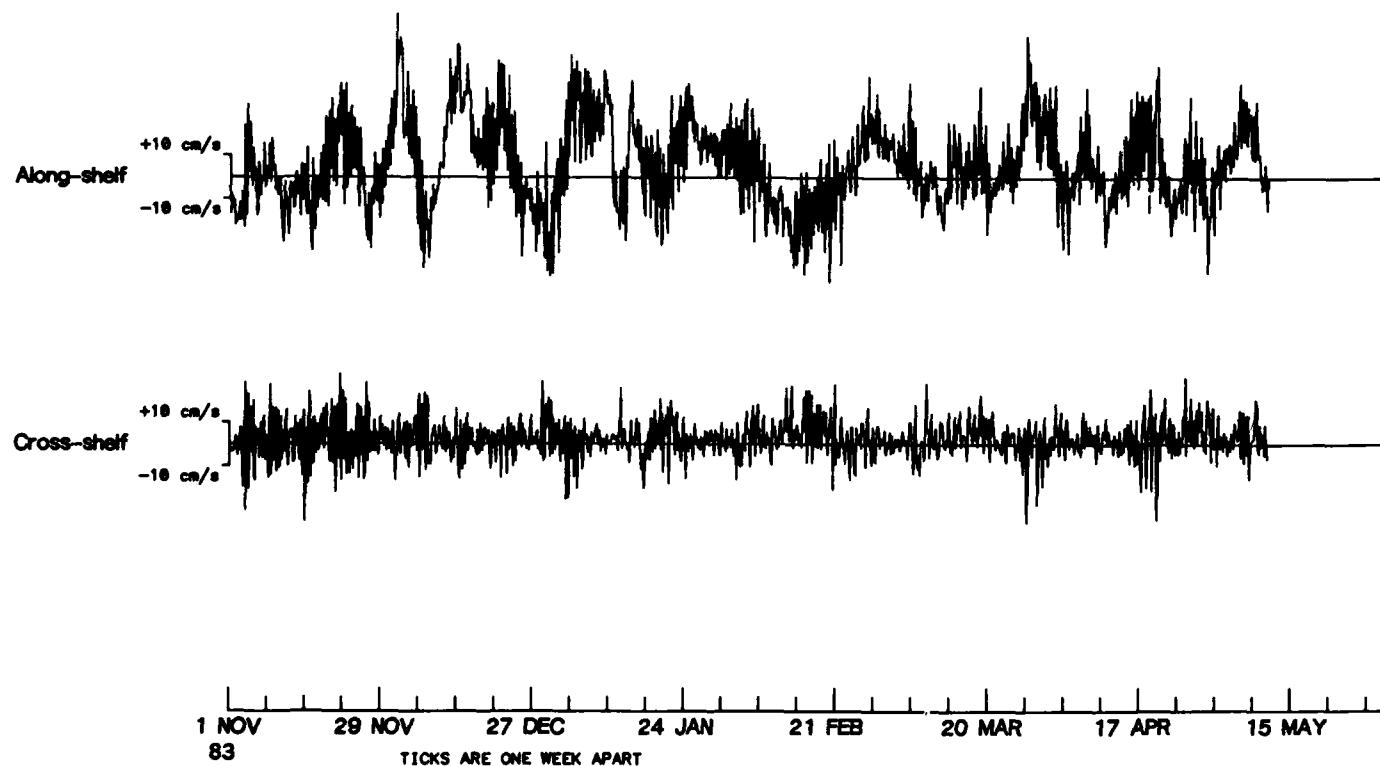
M7 : CURRENTS
depth = 70m Nov 82 - May 83



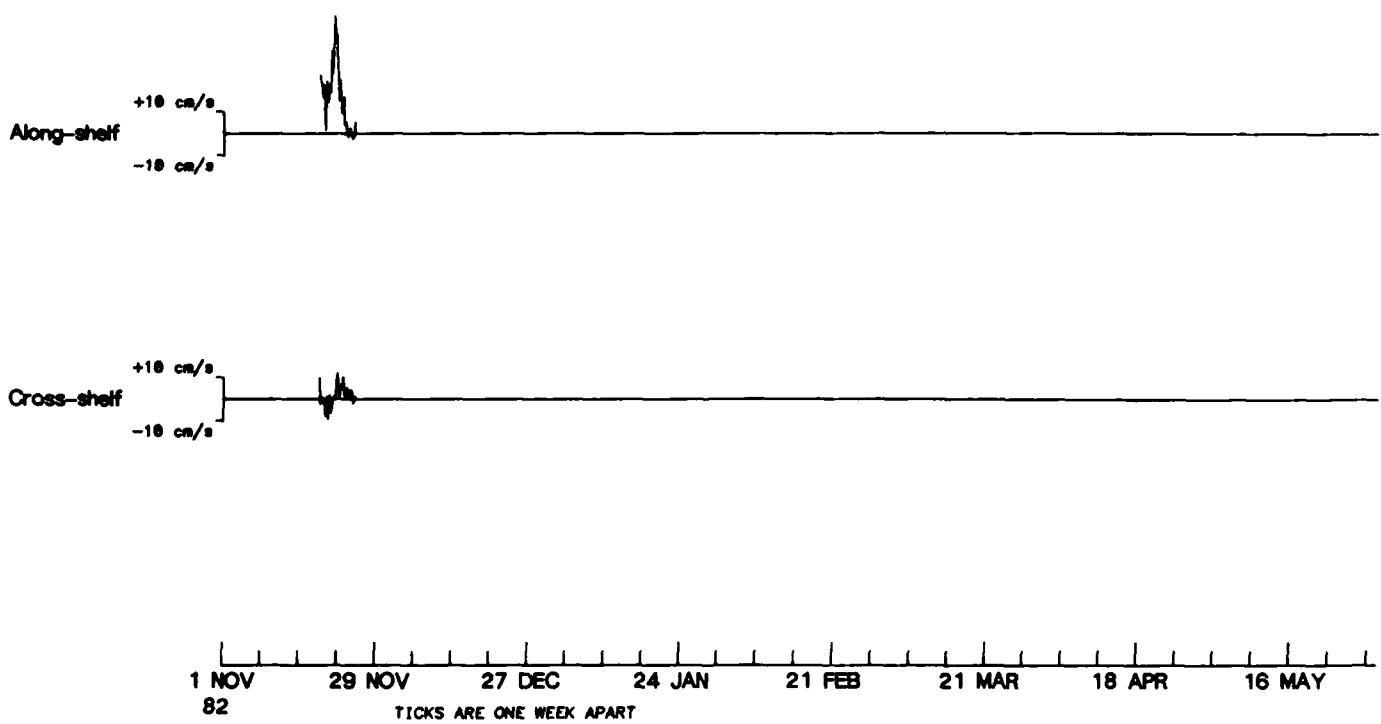
M7 : CURRENTS
depth = 70m May - Nov 83



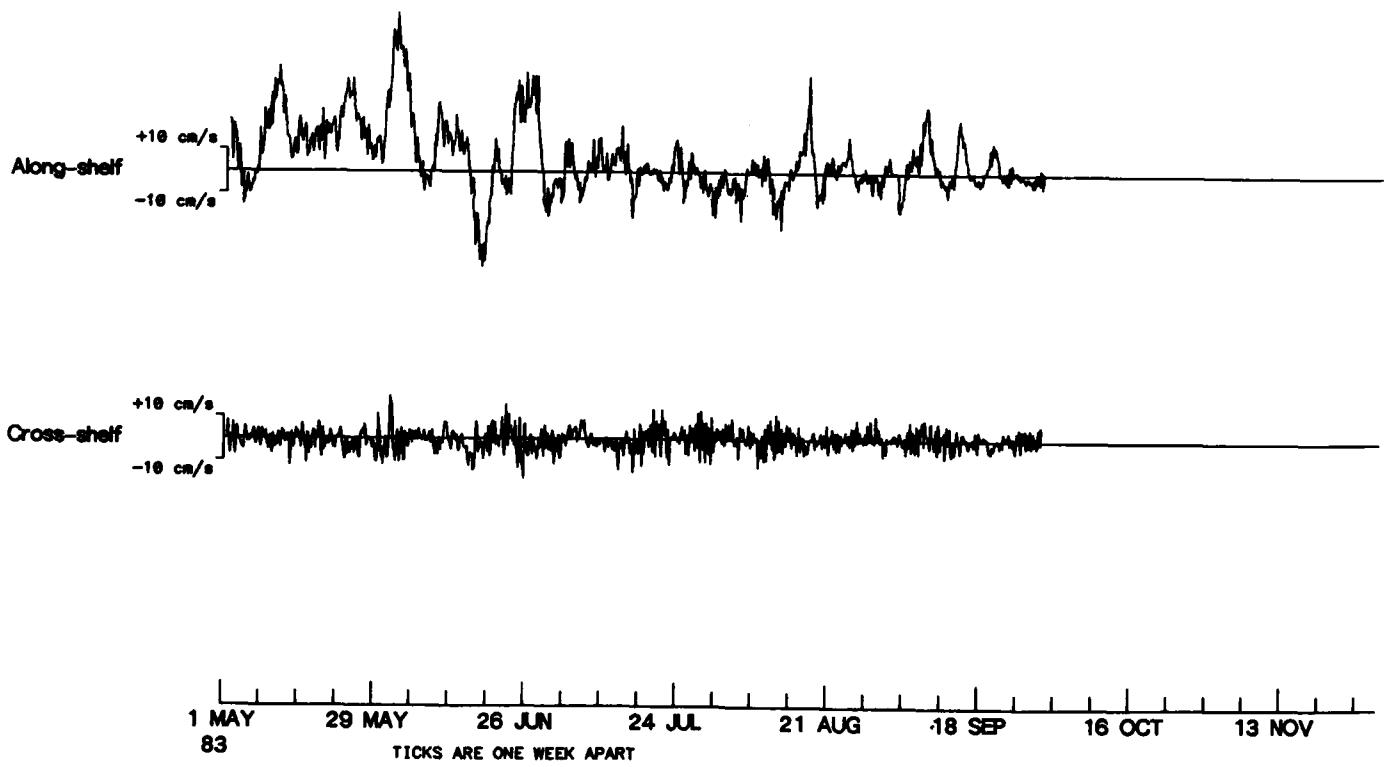
M7 : CURRENTS
depth = 70m Nov 83 - May 84



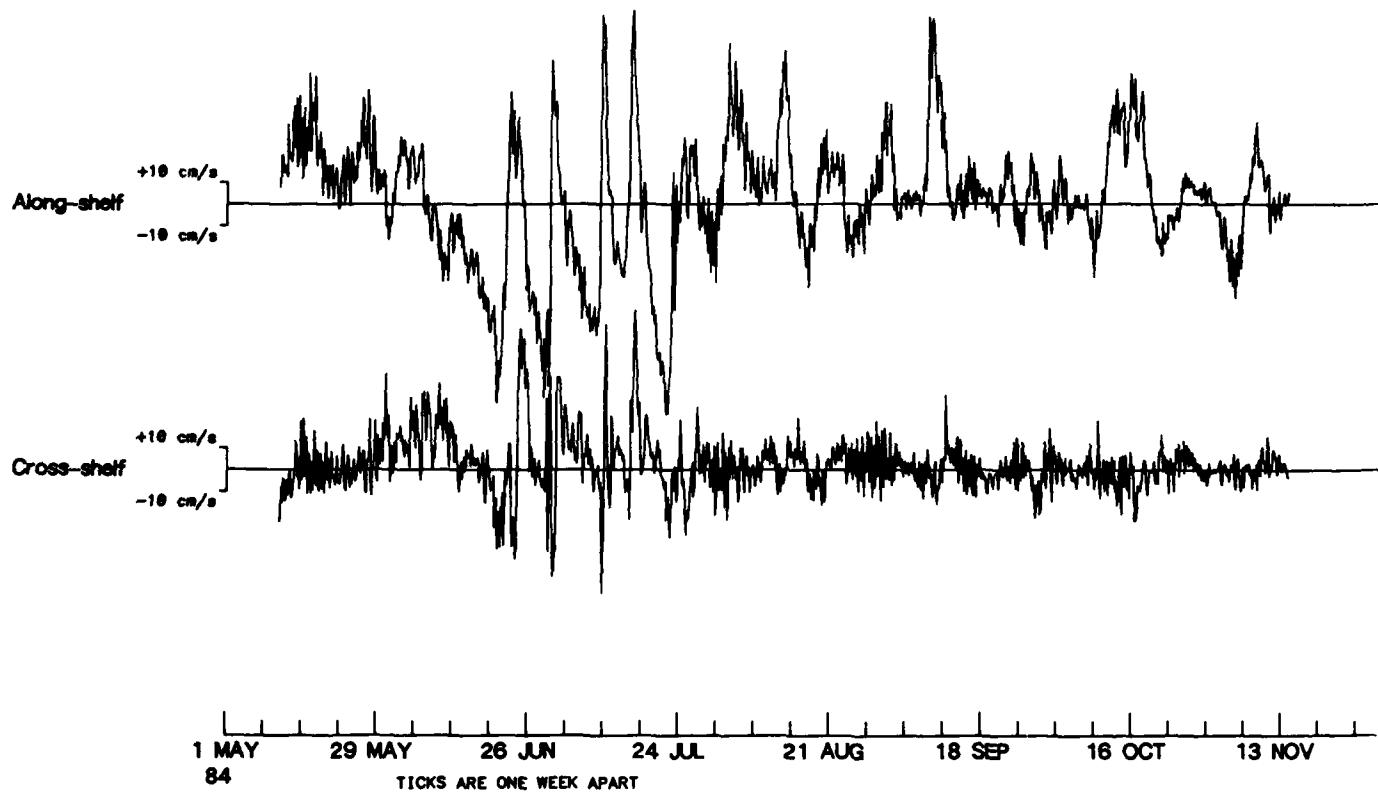
M7 : CURRENTS
depth = 75m Nov 82 - May 83



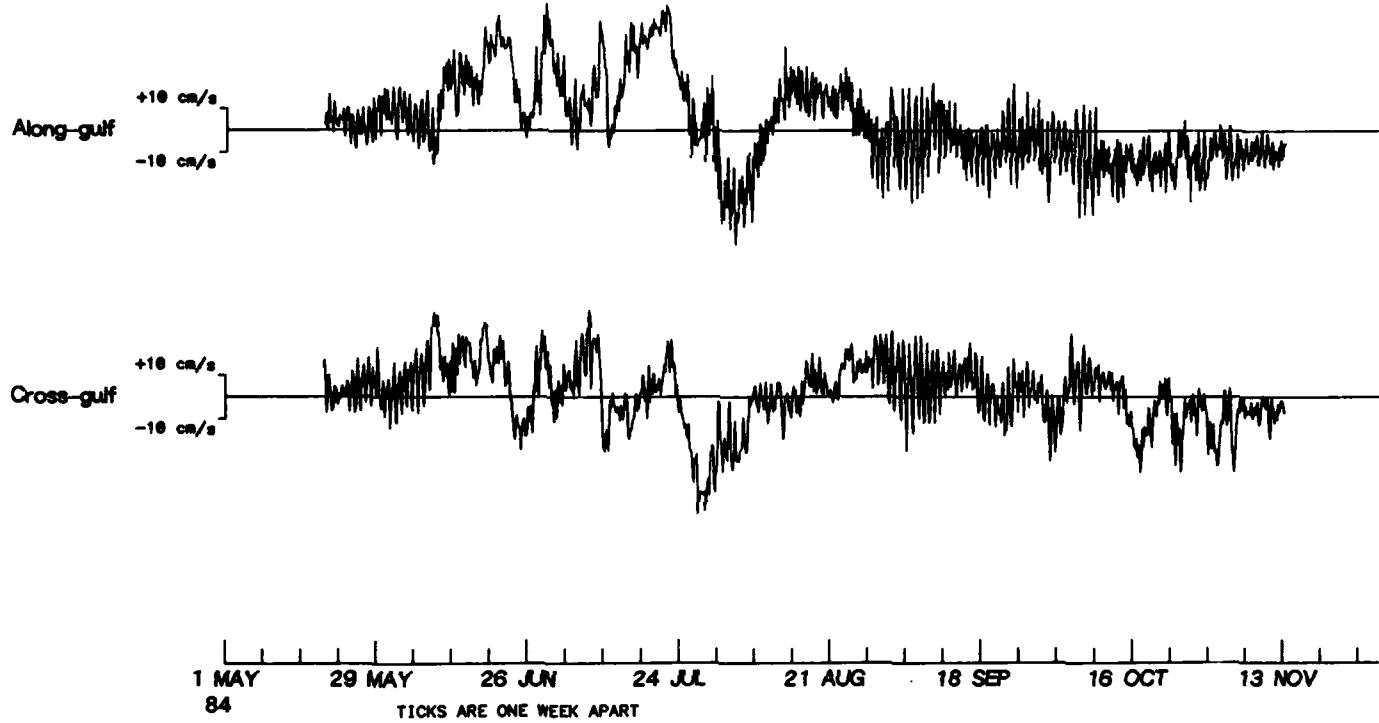
M7 : CURRENTS
depth = 75m May - Nov 83



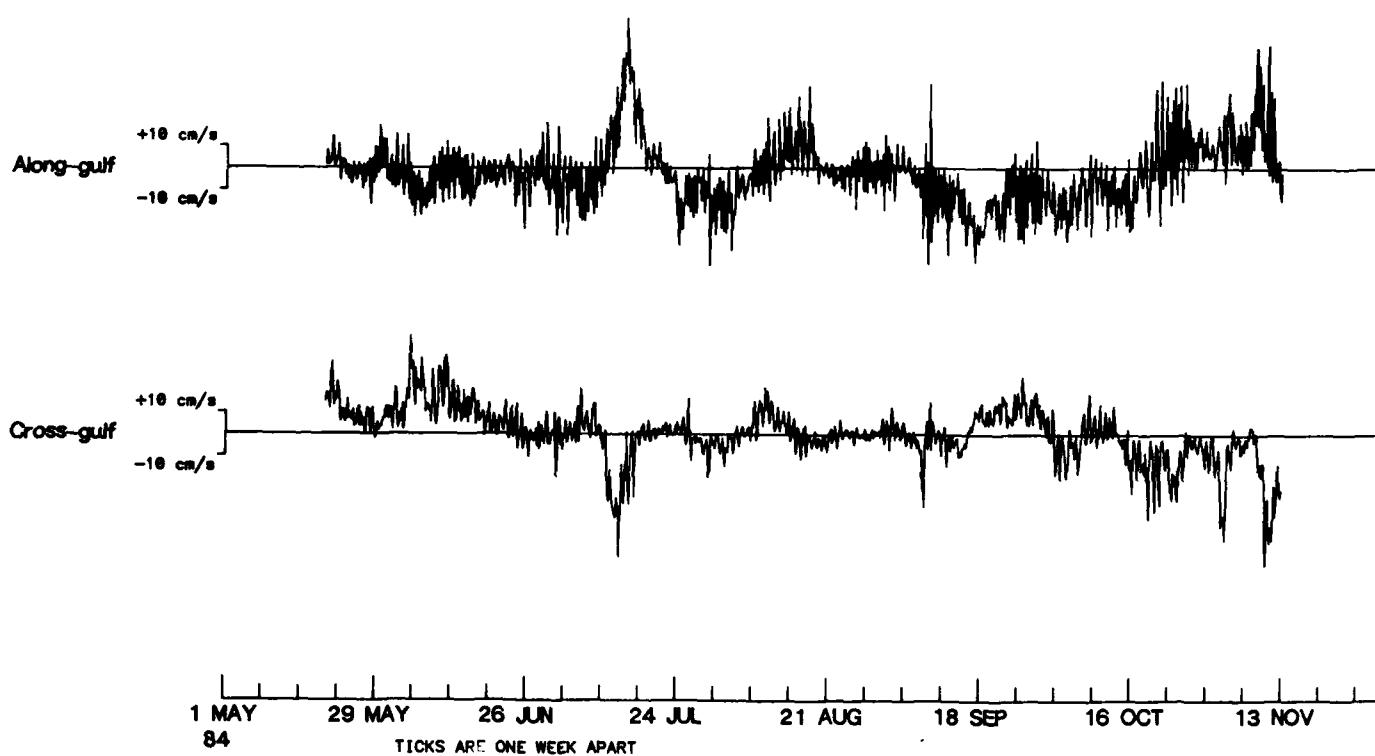
M8 : CURRENTS
depth = 10m May - Nov 84



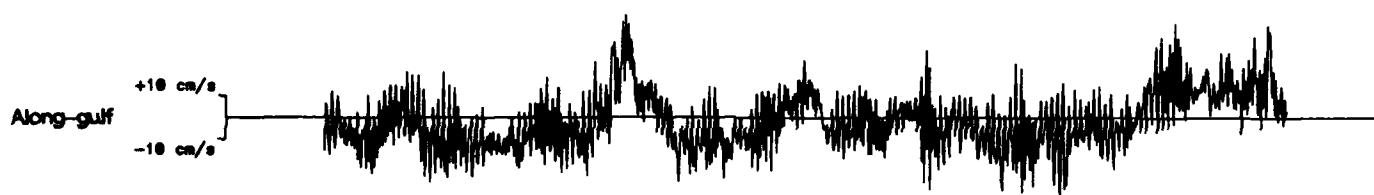
M9 : CURRENTS
depth = 50m May - Nov 84



M9 : CURRENTS
depth = 300m May - Nov 84

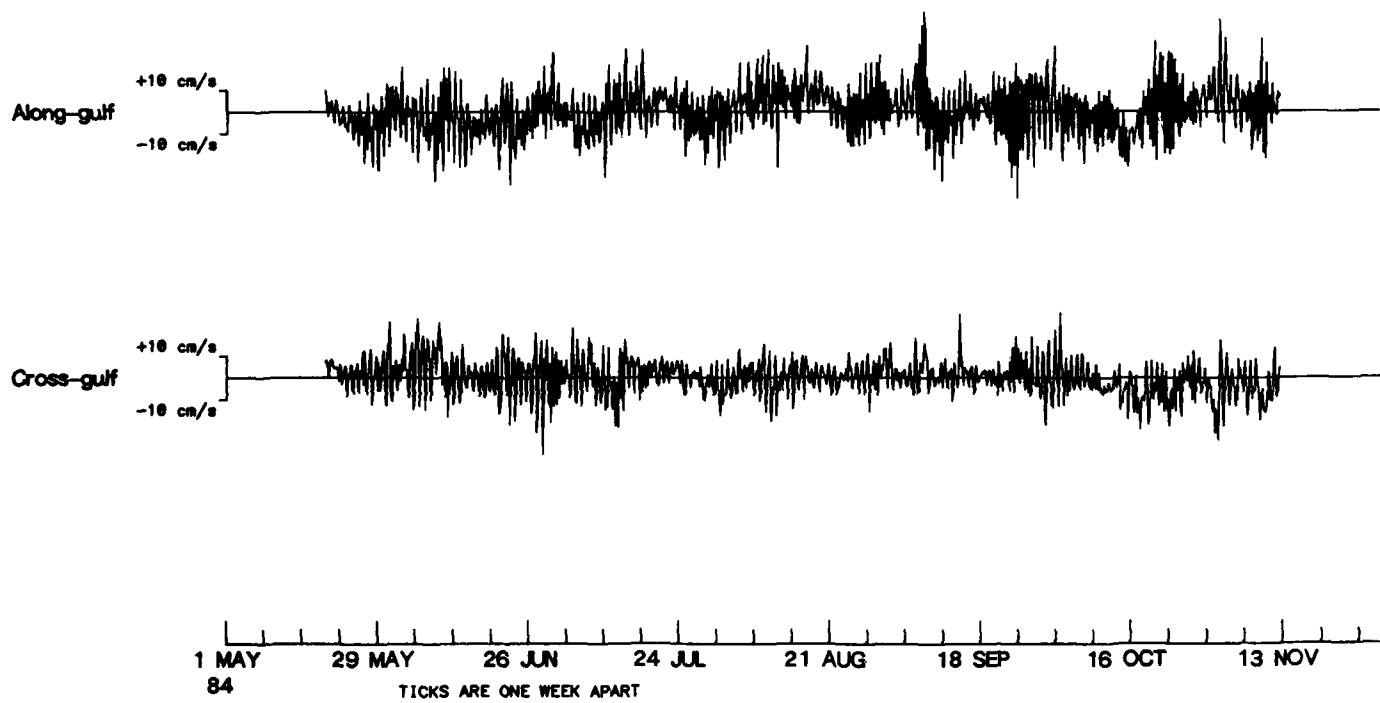


M9 : CURRENTS
depth = 500m May - Nov 84

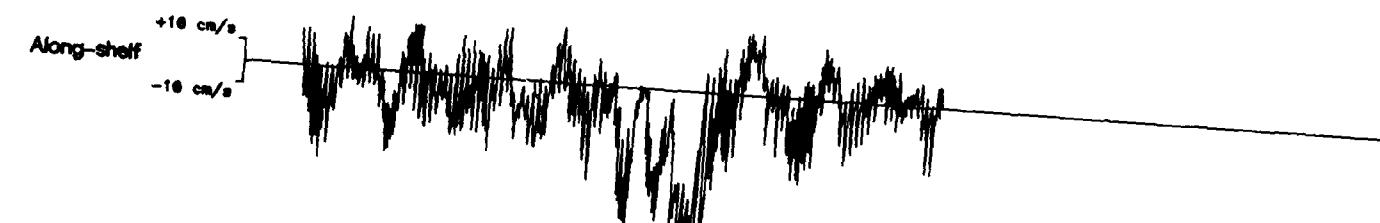


1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84 TICKS ARE ONE WEEK APART

M9 : CURRENTS
depth = 850m May - Nov 84



M10 : CURRENTS
depth = 10m May - Nov 84

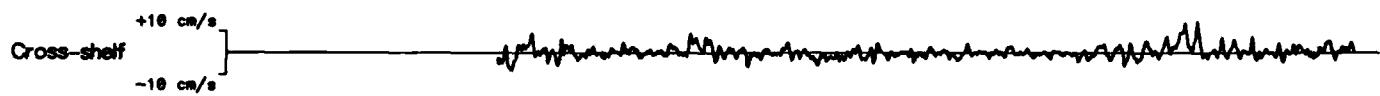


1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV

84

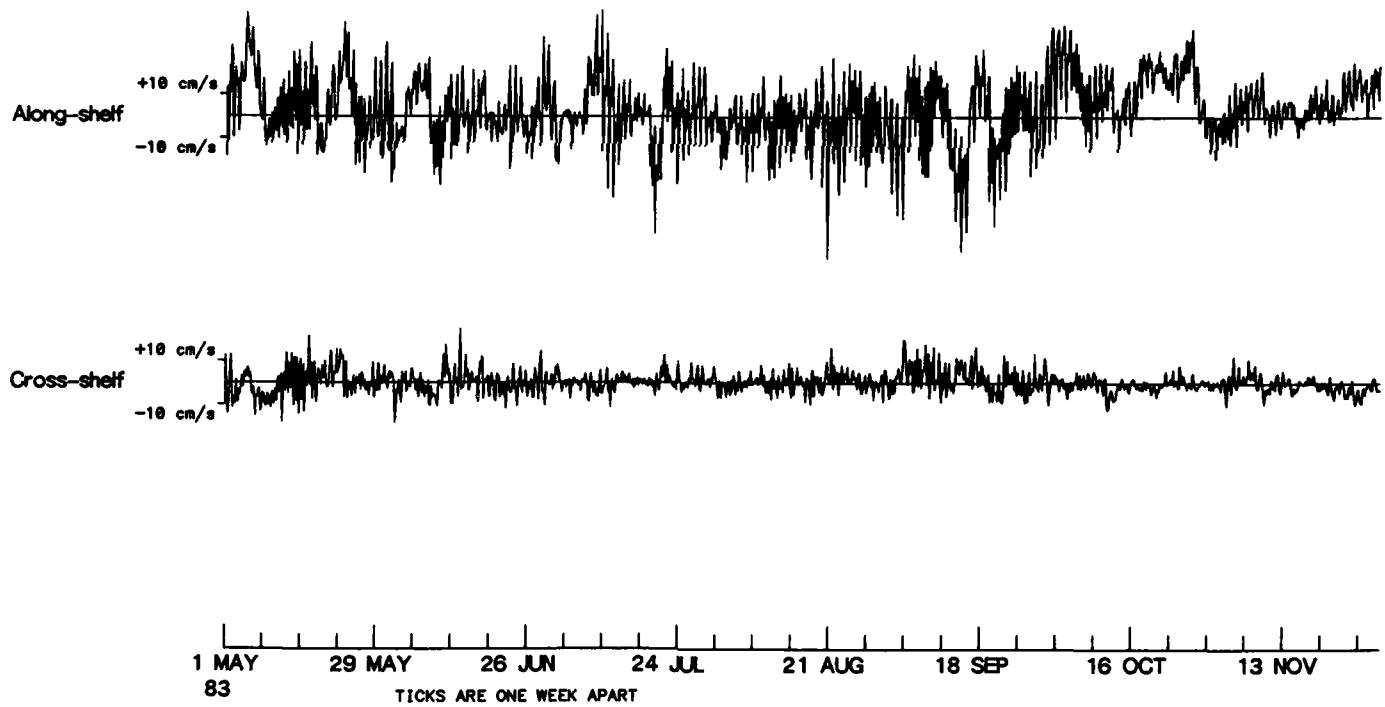
TICKS ARE ONE WEEK APART

M11 : LOW FREQUENCY CURRENTS
depth = 10m Nov 82 - Nov 84

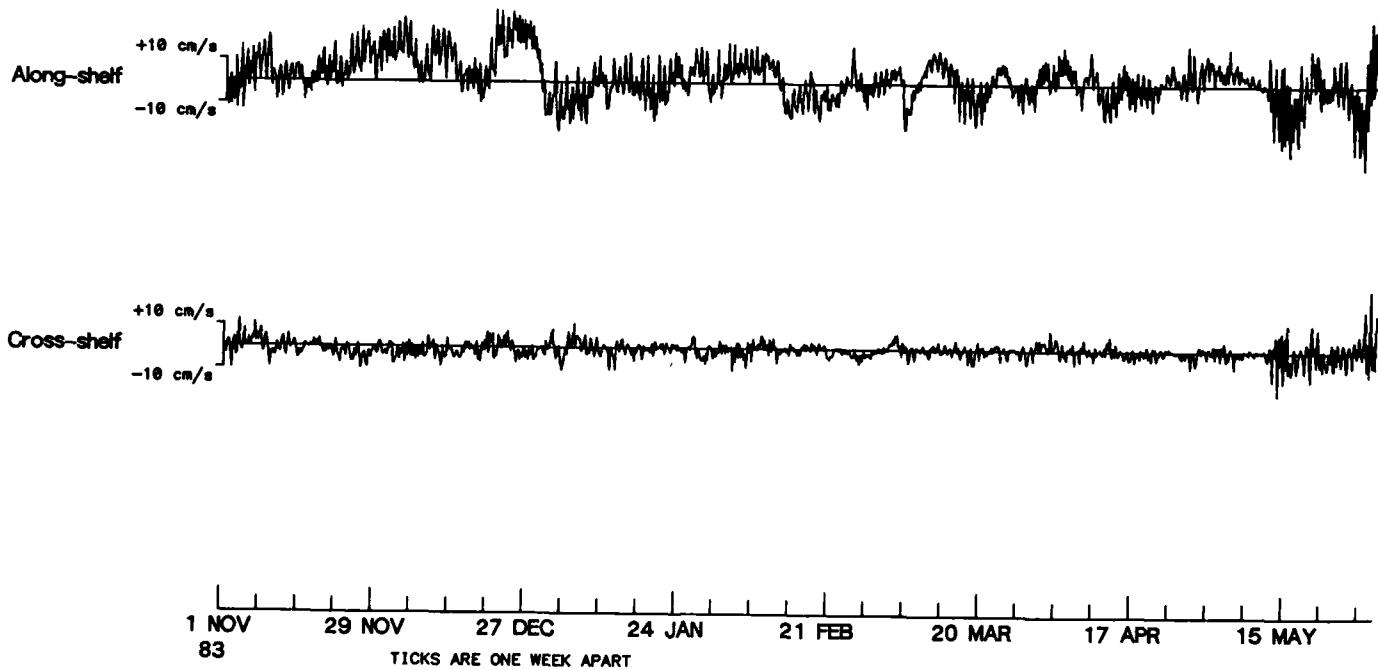


NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV
82 83 84

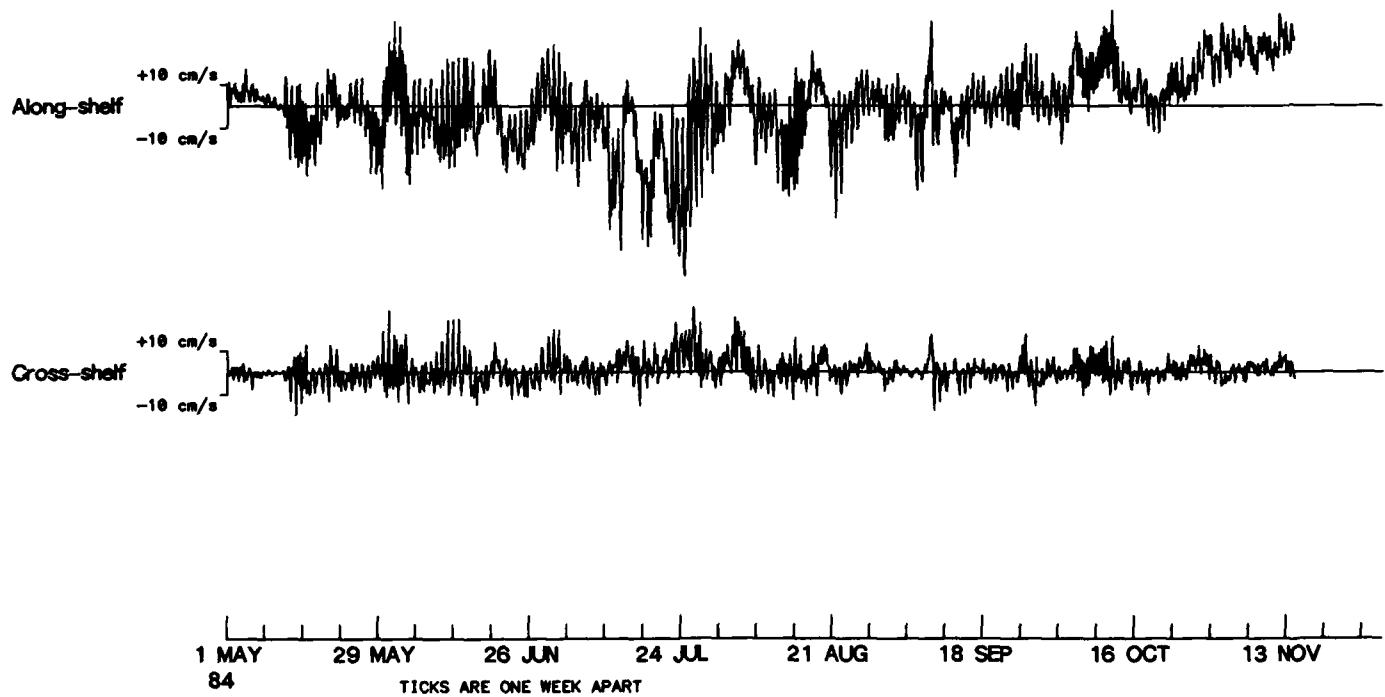
M11 : CURRENTS
depth ~ 10m May - Nov 83



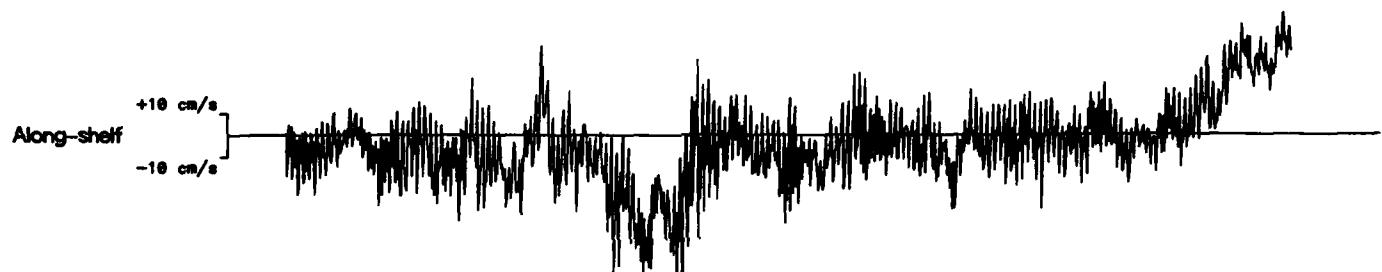
M11 : CURRENTS
depth = 10m Nov 83 - May 84



M11 : CURRENTS
depth = 10m May - Nov 84



M11 : CURRENTS
depth = 30m May - Nov 84



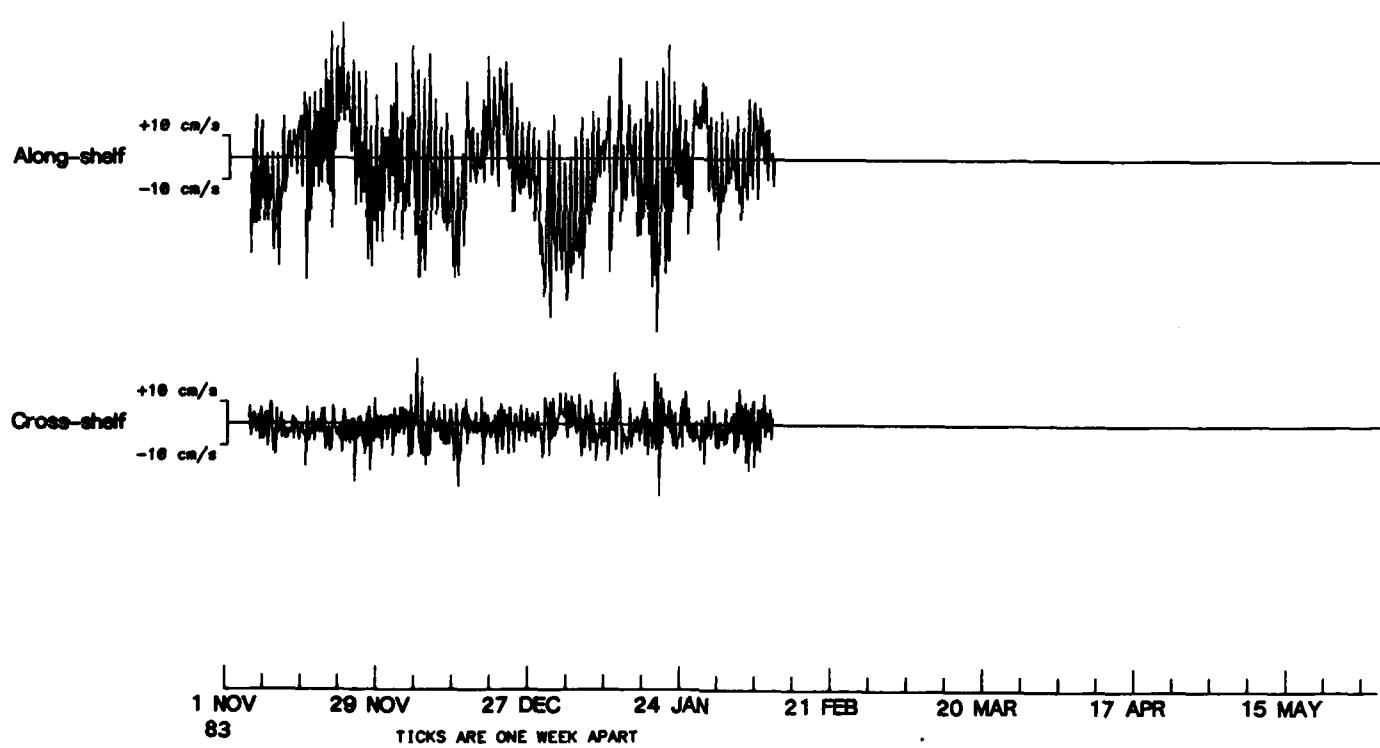
1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 18 OCT 13 NOV
84 TICKS ARE ONE WEEK APART

M11 : CURRENTS
depth = 65m May - Nov 83

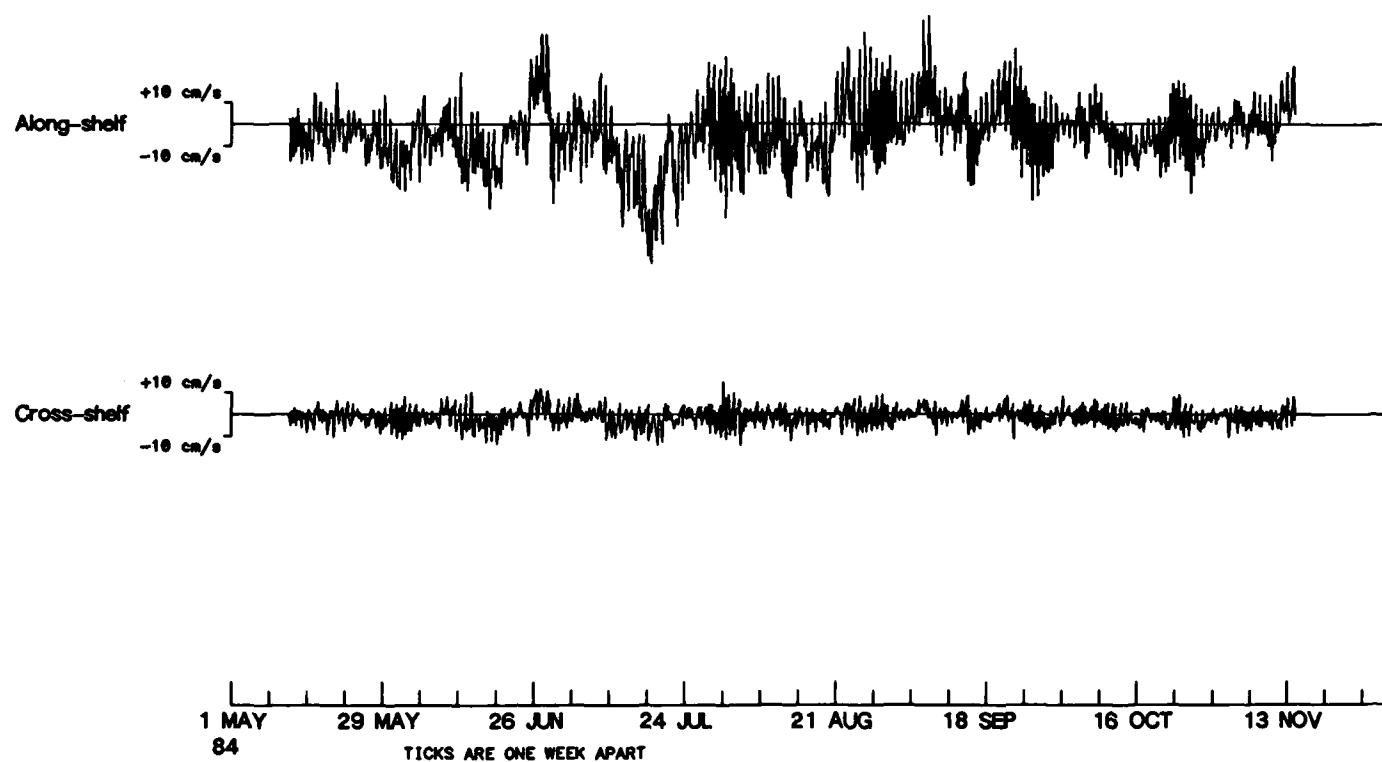


1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
83 TICKS ARE ONE WEEK APART

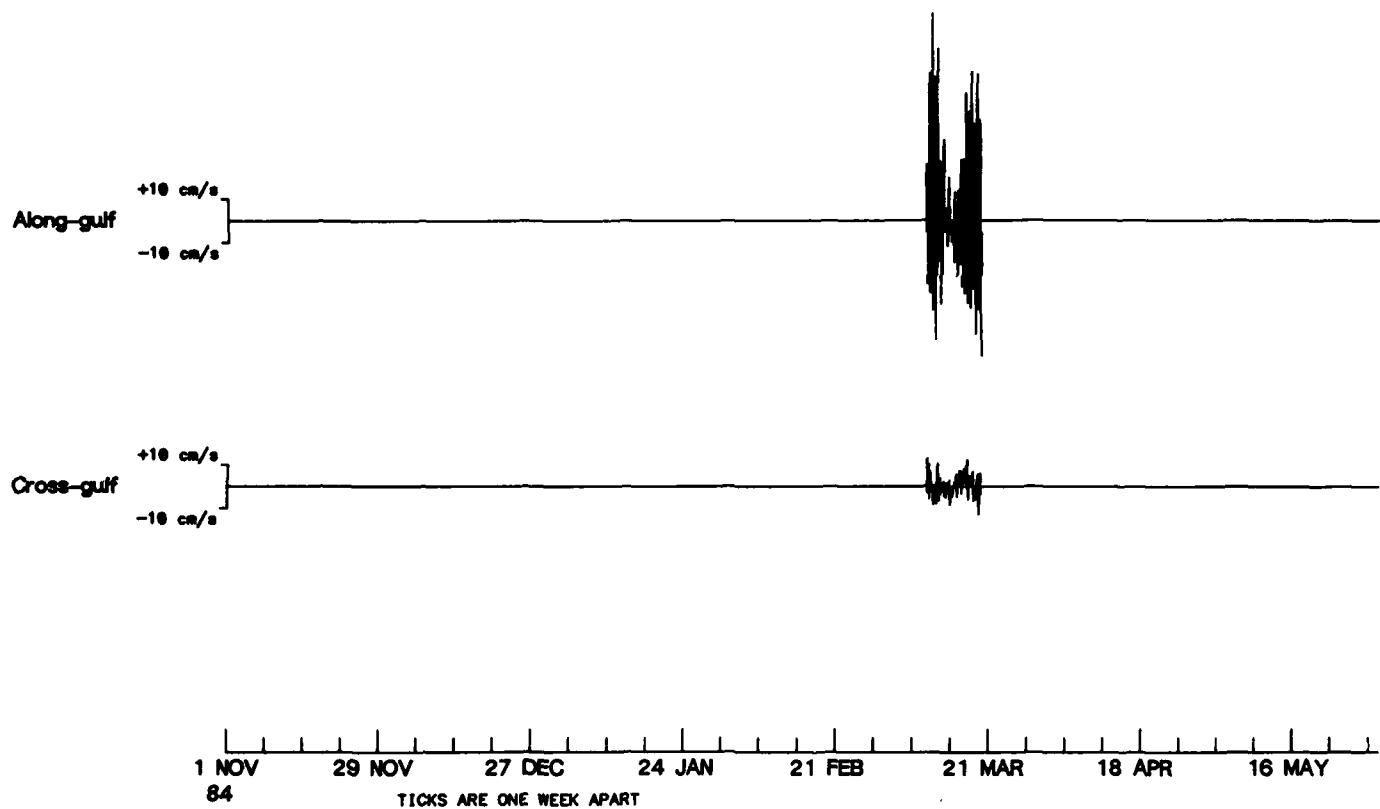
M11 : CURRENTS
depth = 65m Nov 83 - May 84



M11 : CURRENTS
depth = 70m May - Nov 84



M12 : CURRENTS
depth = 450m Nov 84 - May 85



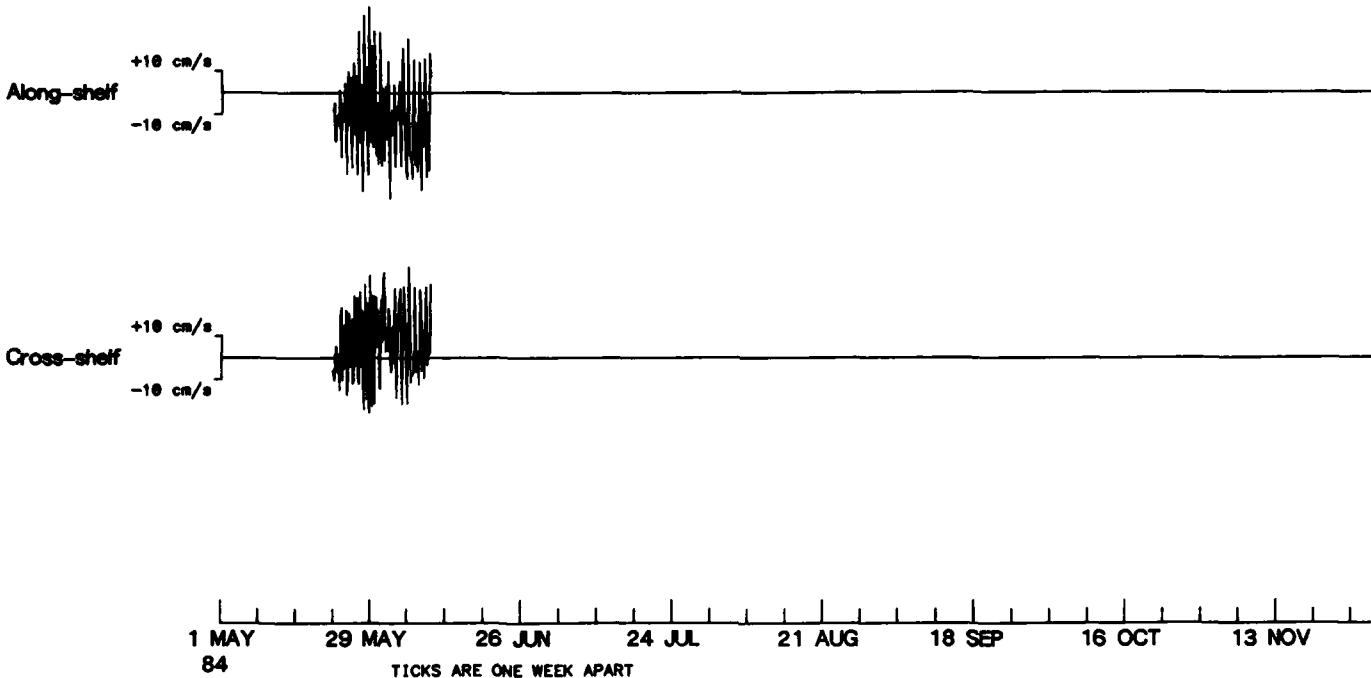
M13 : CURRENTS
depth = 150m Nov 84 - May 85



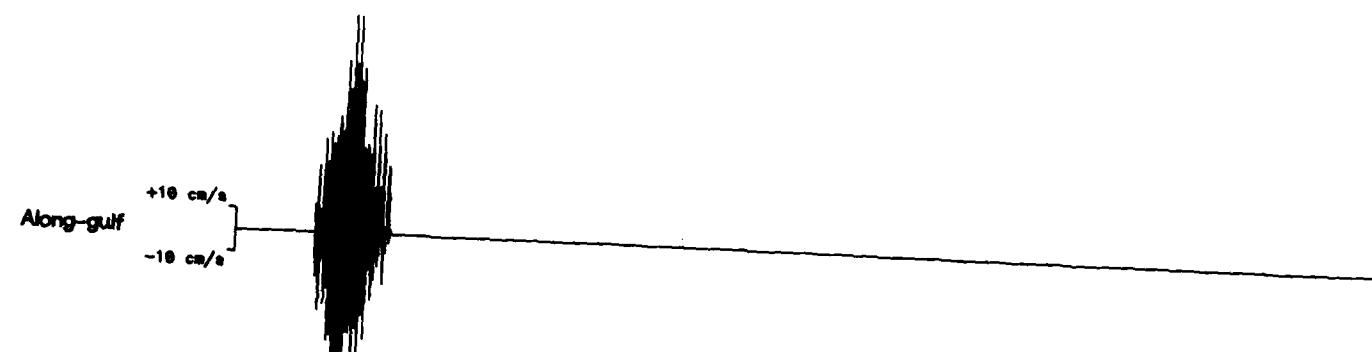
1 NOV 29 NOV 27 DEC 24 JAN 21 FEB 21 MAR 18 APR 16 MAY
84

TICKS ARE ONE WEEK APART

M14 : CURRENTS
depth = 10m May - Nov 84

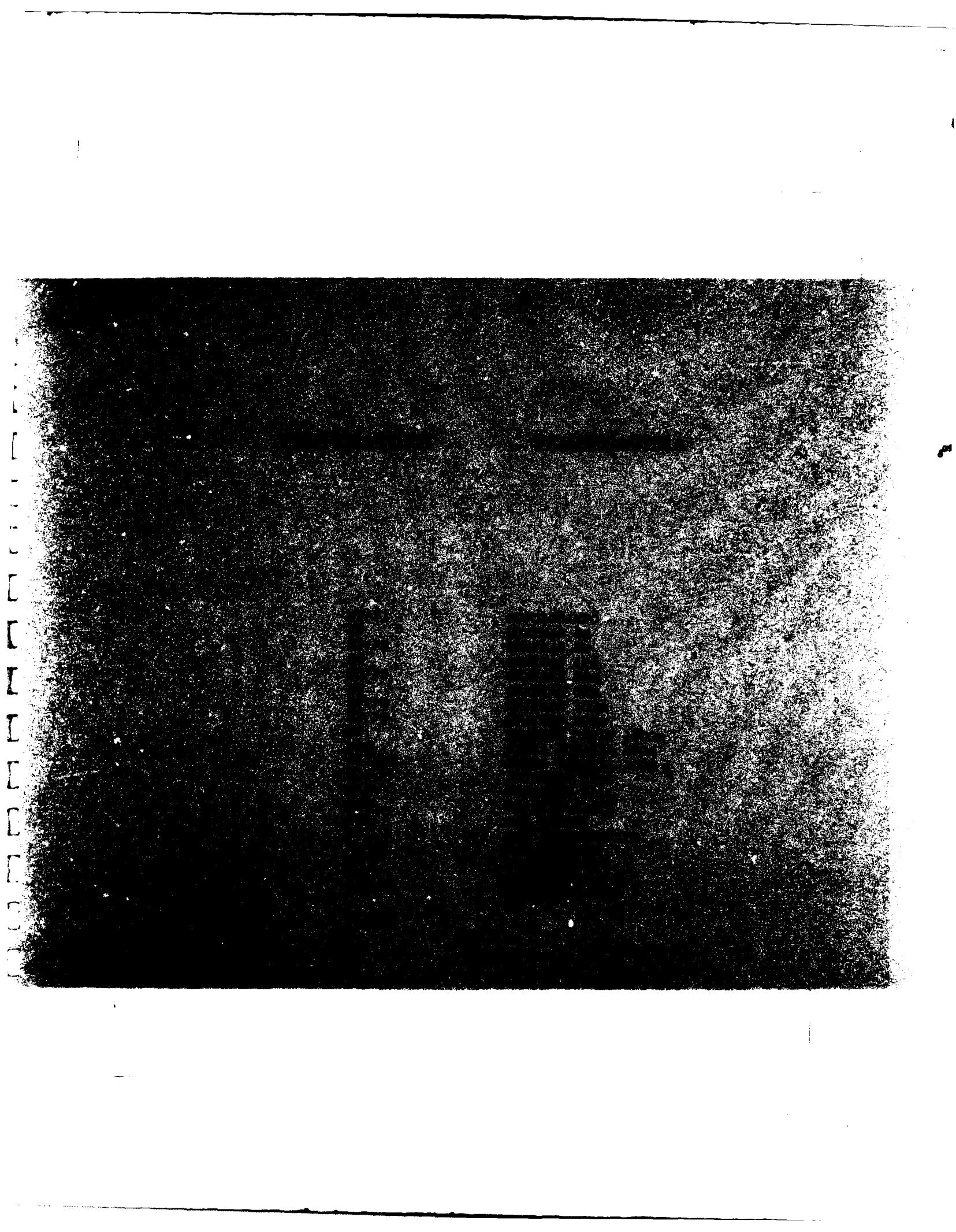


M15 : CURRENTS
depth = 150m Nov 84 - May 85

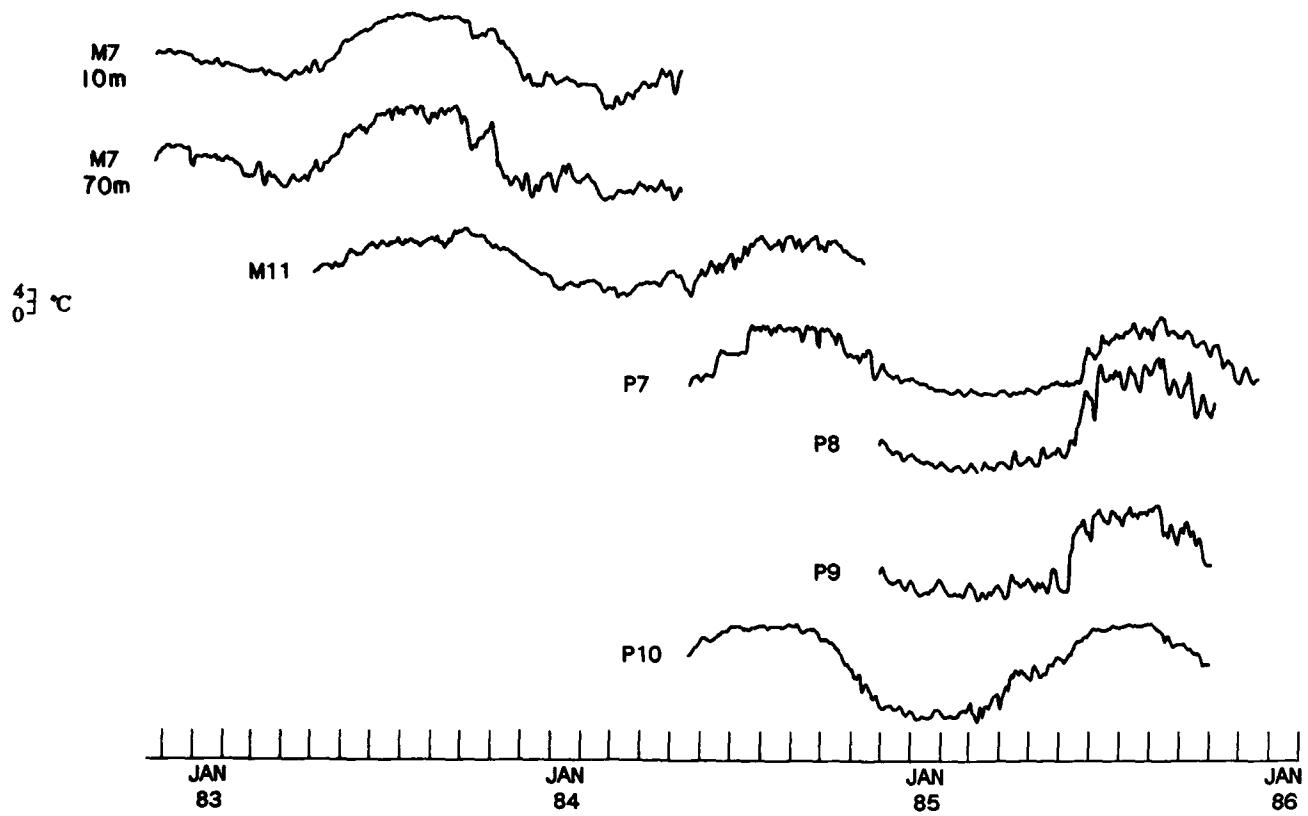


1 NOV 29 NOV 27 DEC 24 JAN 21 FEB 21 MAR 18 APR 16 MAY
84

TICKS ARE ONE WEEK APART

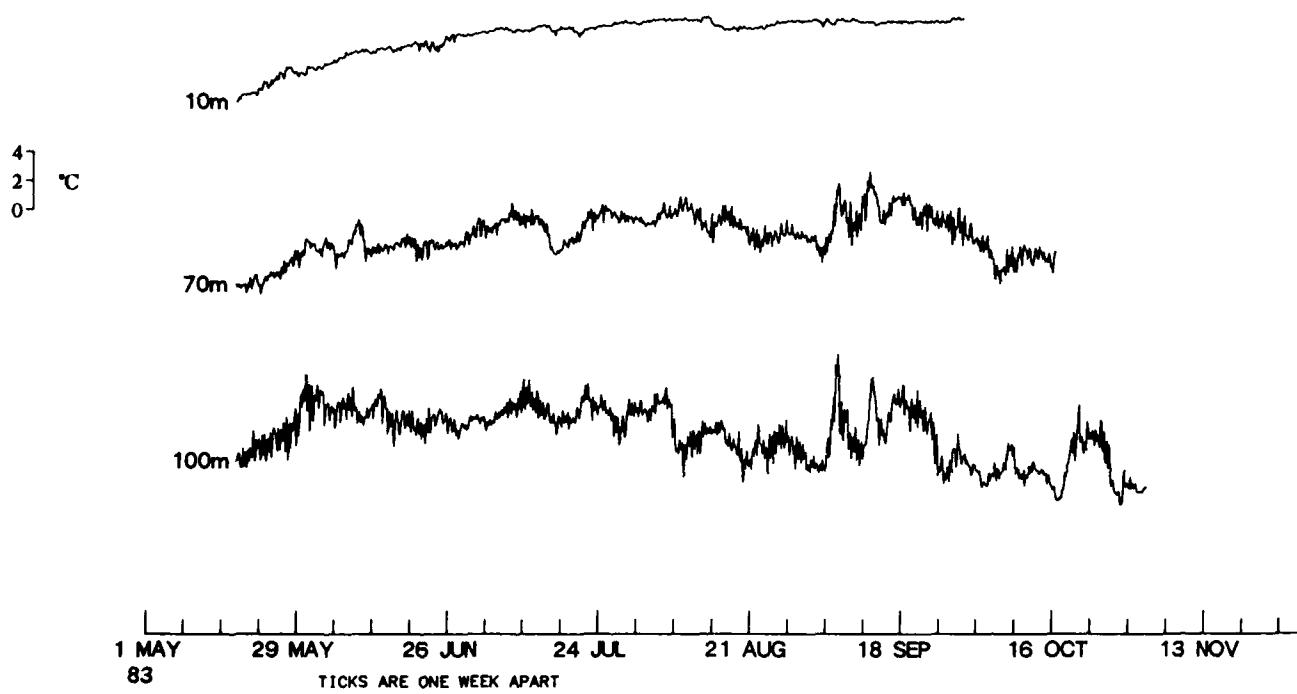


LOW FREQUENCY TEMPERATURE
Nov 82 - Jan 86



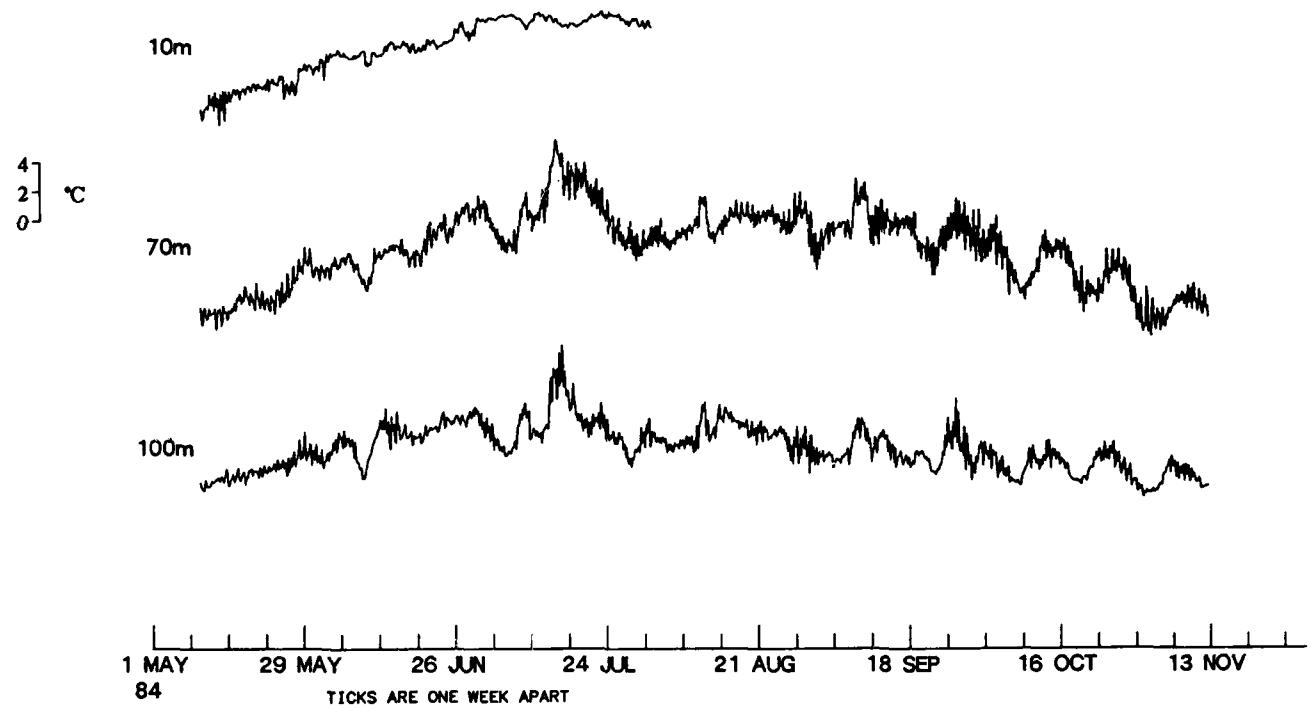
40/-81-

M1 : TEMPERATURE
May - Nov 83

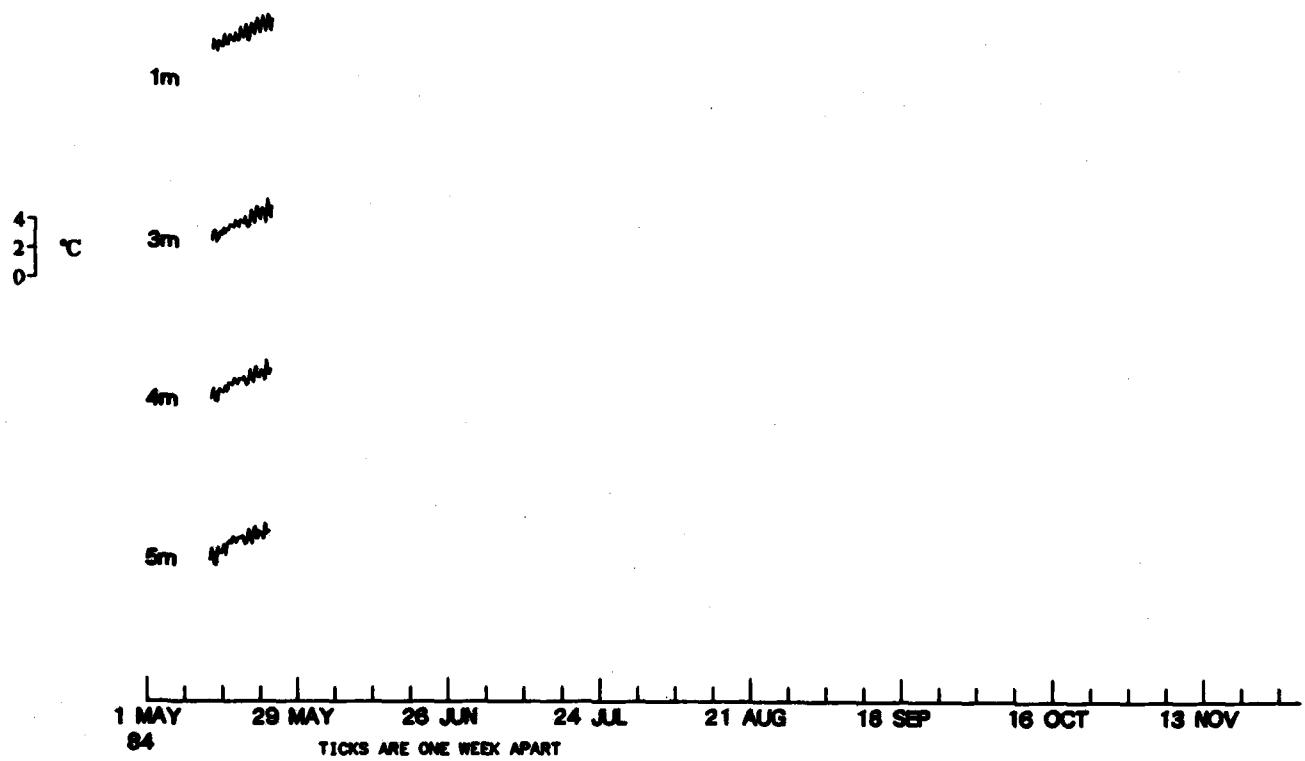


M1 : TEMPERATURE

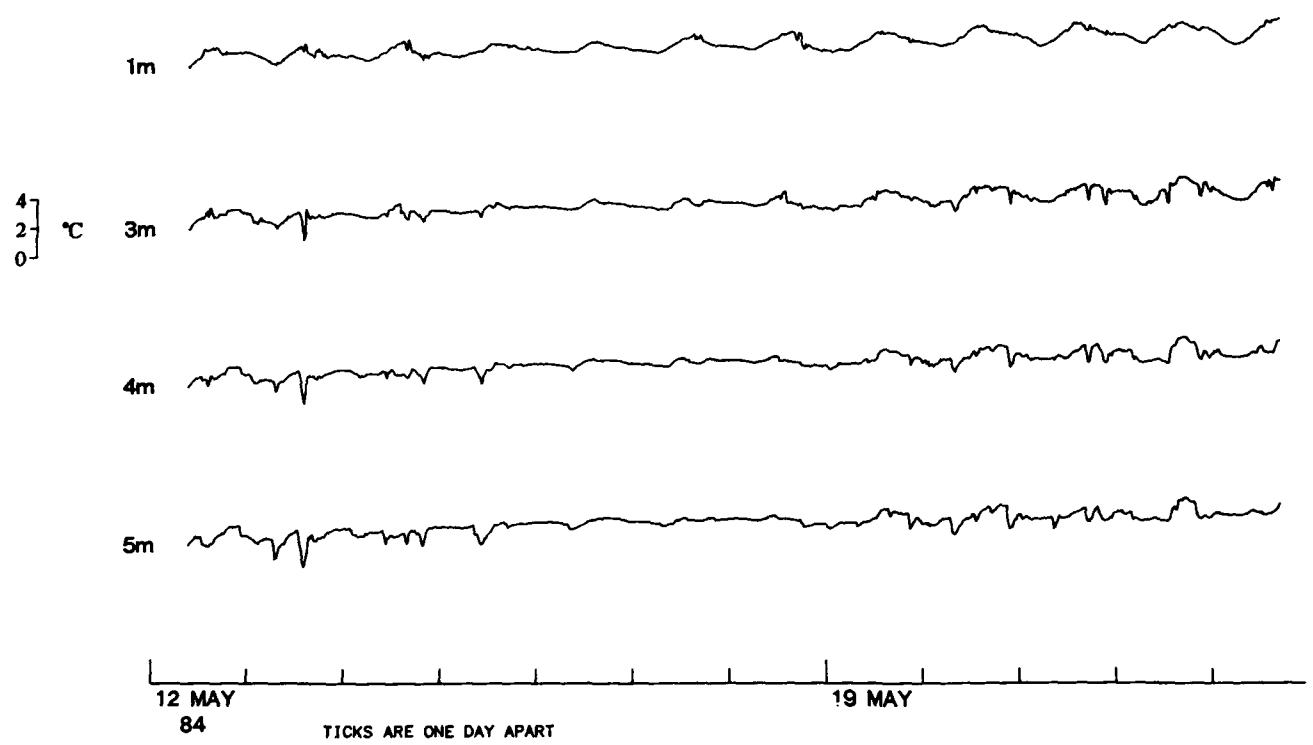
May - Nov 84



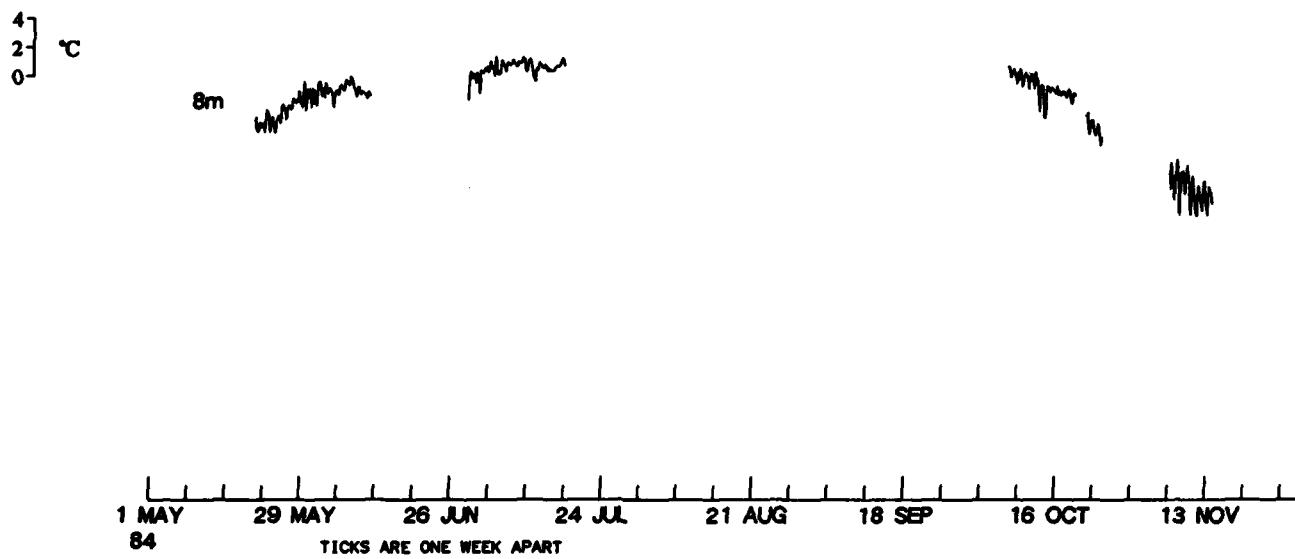
M2 : TEMPERATURE
May - Nov 84



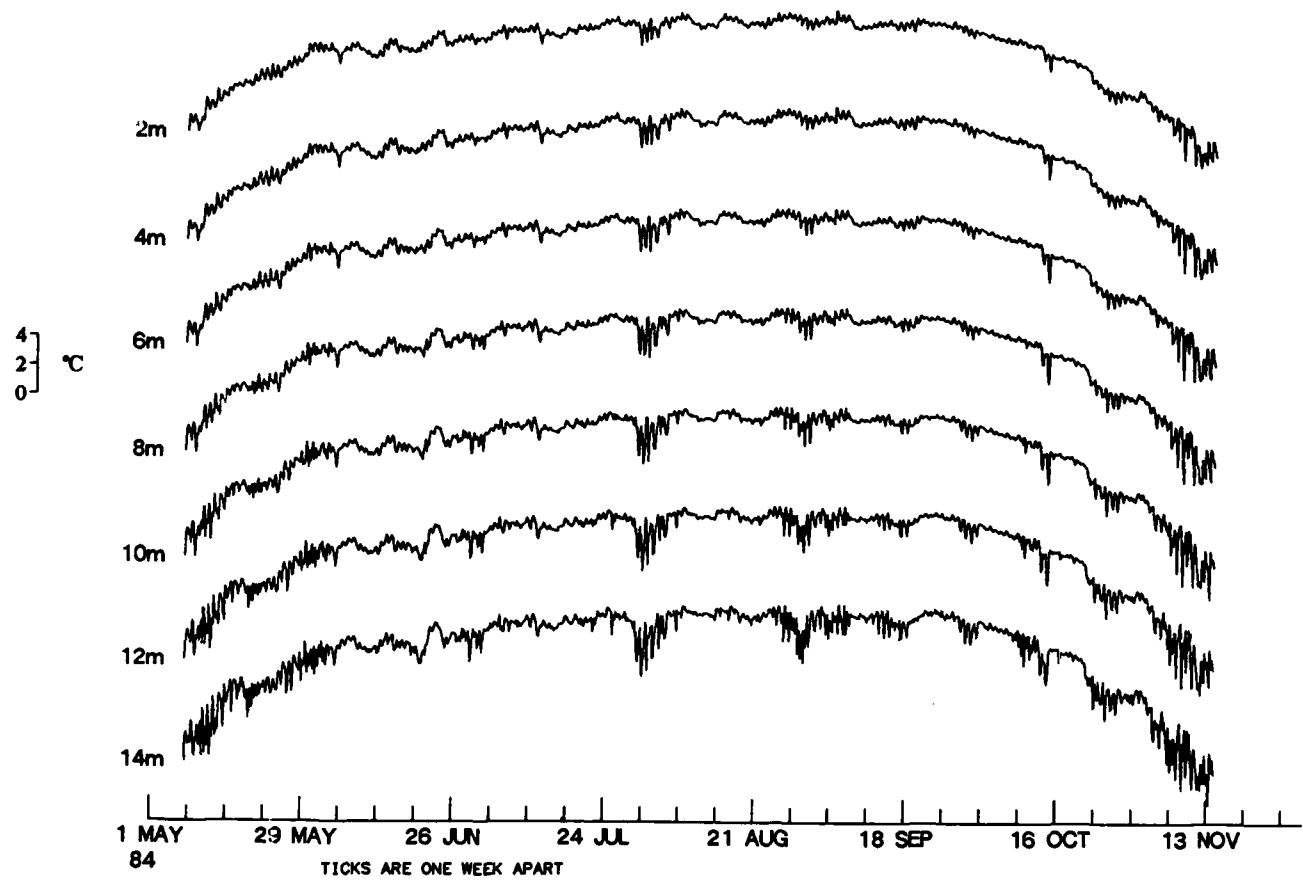
M2 : TEMPERATURE
May 84



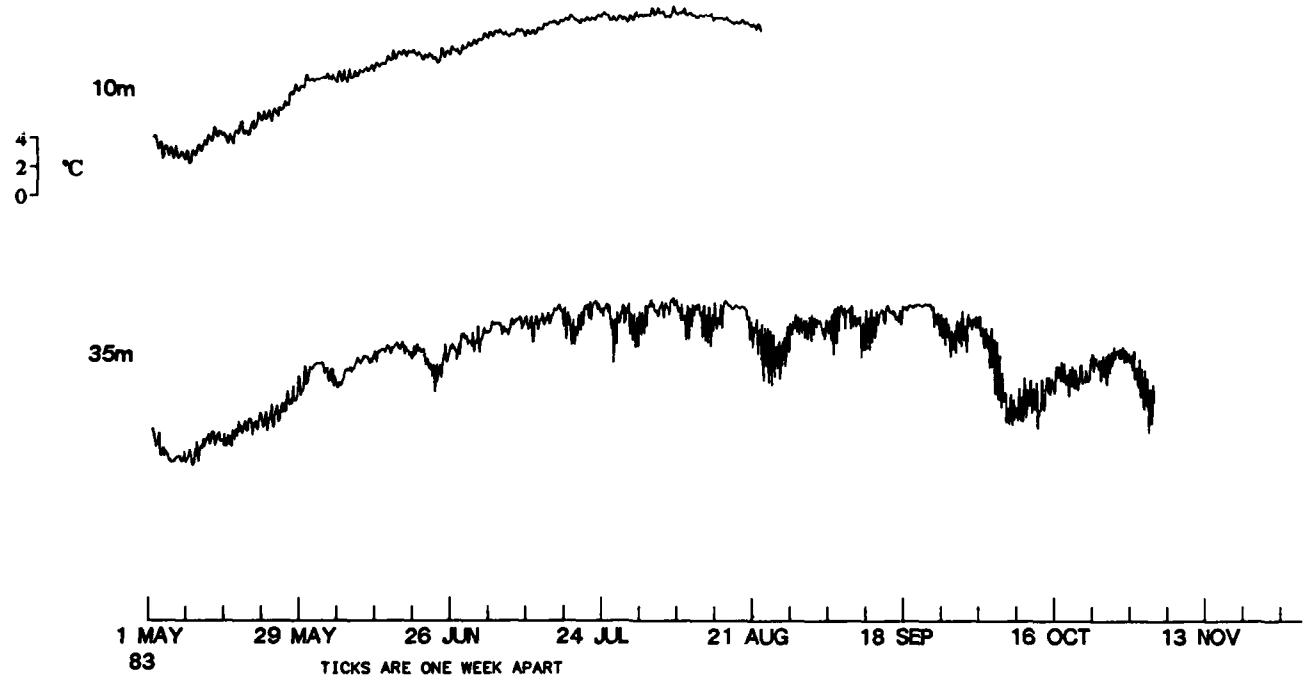
M3 : TEMPERATURE
May - Nov 84



M4 : TEMPERATURE
May - Nov 84



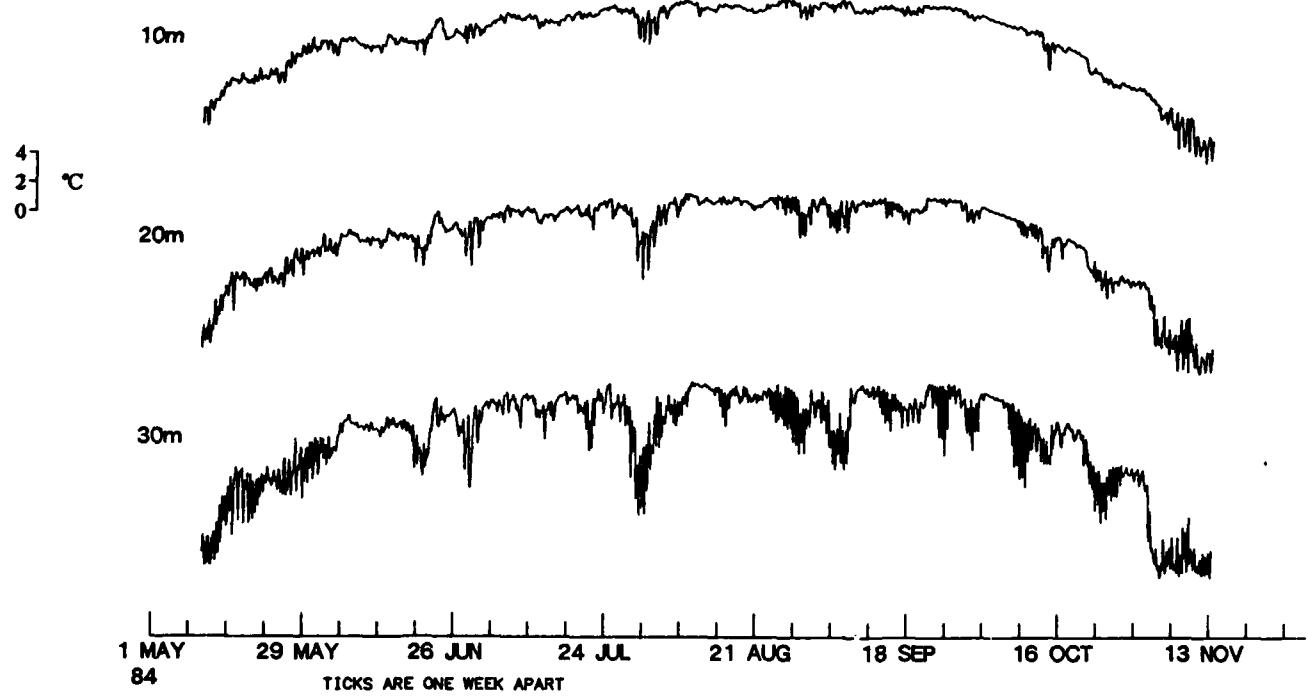
M5 : TEMPERATURE
May - Nov 83



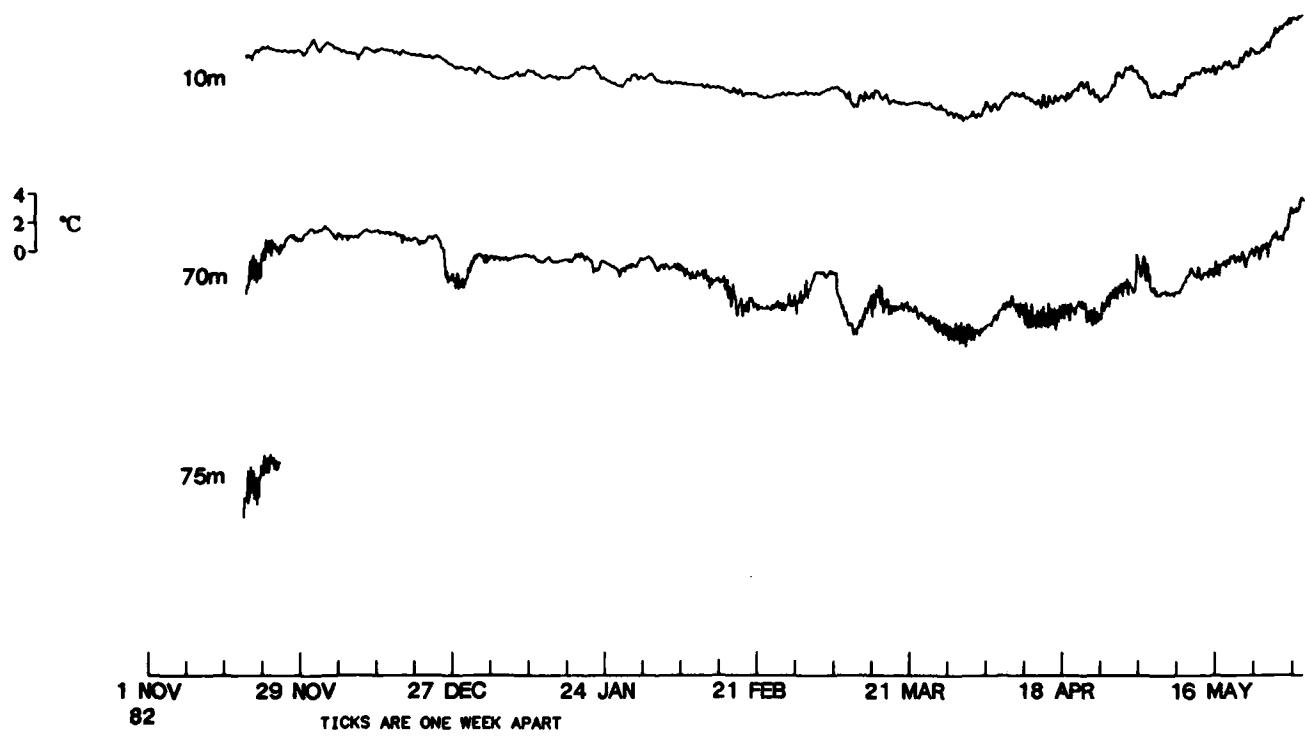
1 MAY
83

TICKS ARE ONE WEEK APART

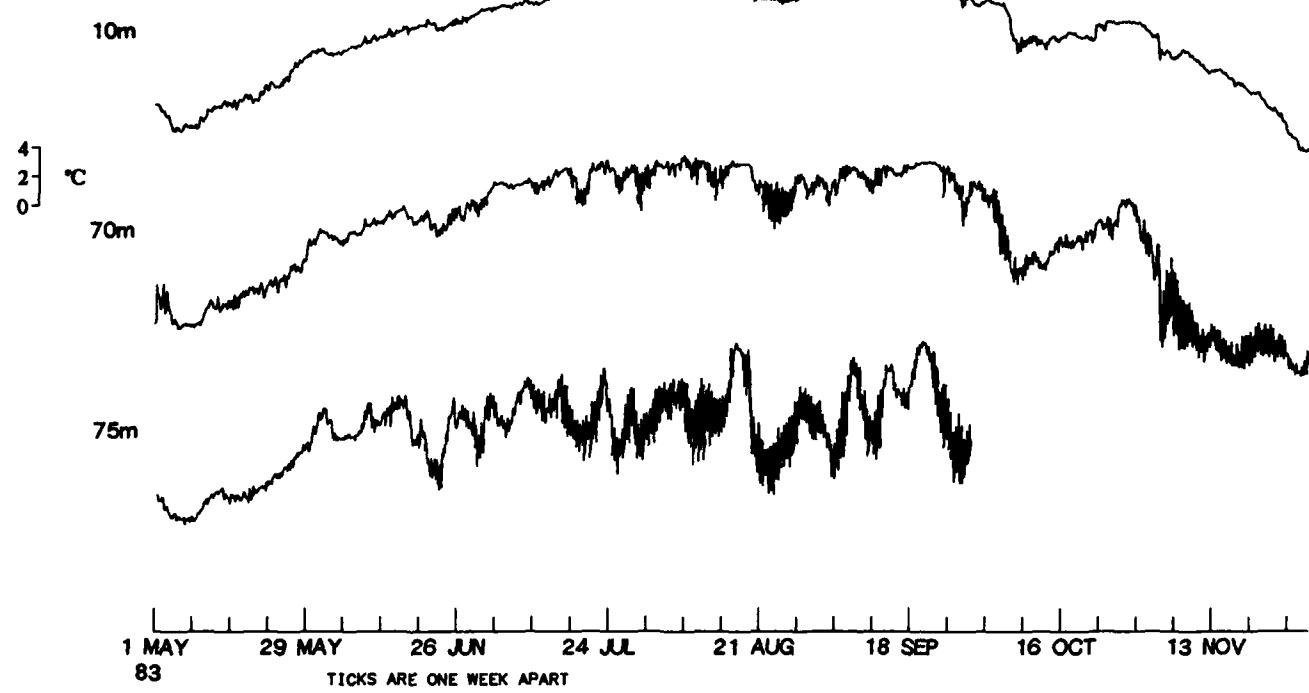
M6 : TEMPERATURE
May - Nov 84



M7 : TEMPERATURE
Nov 82 - May 83

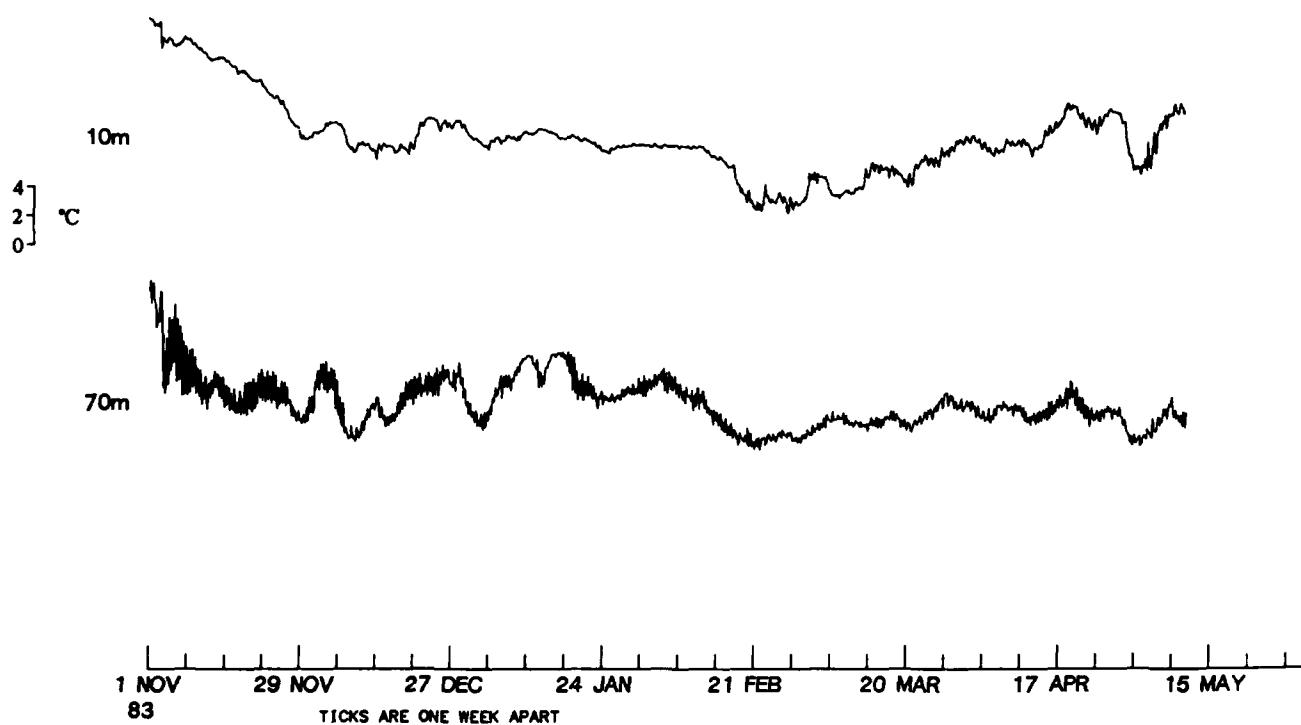


M7 : TEMPERATURE
May - Nov 83

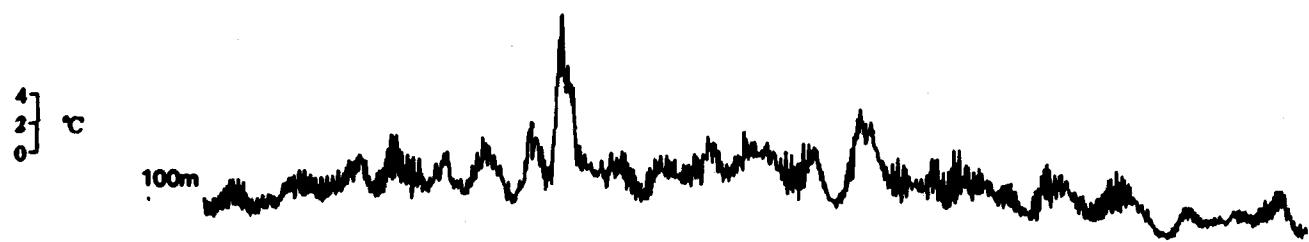


M7 : TEMPERATURE

Nov 83 - May 84

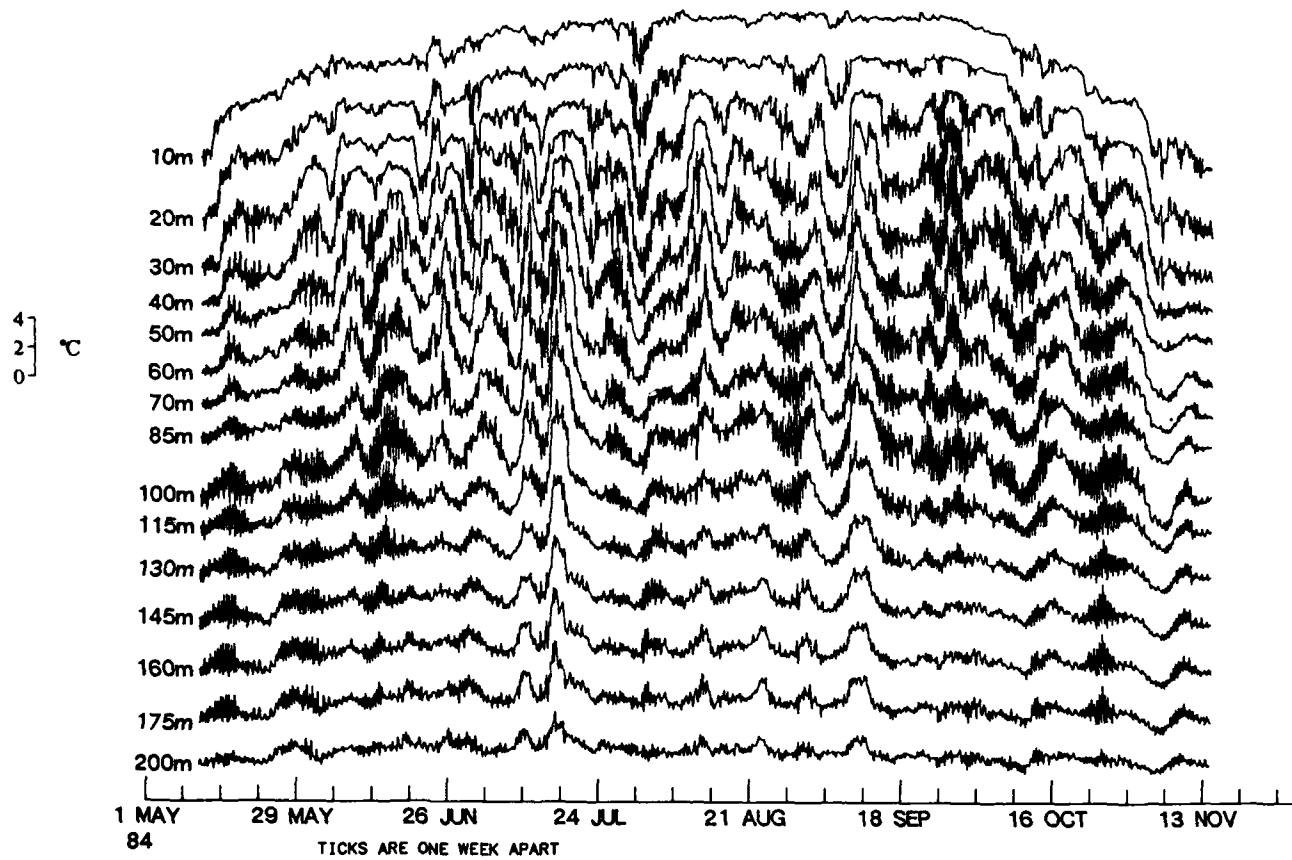


M7 : TEMPERATURE
May - Nov 84

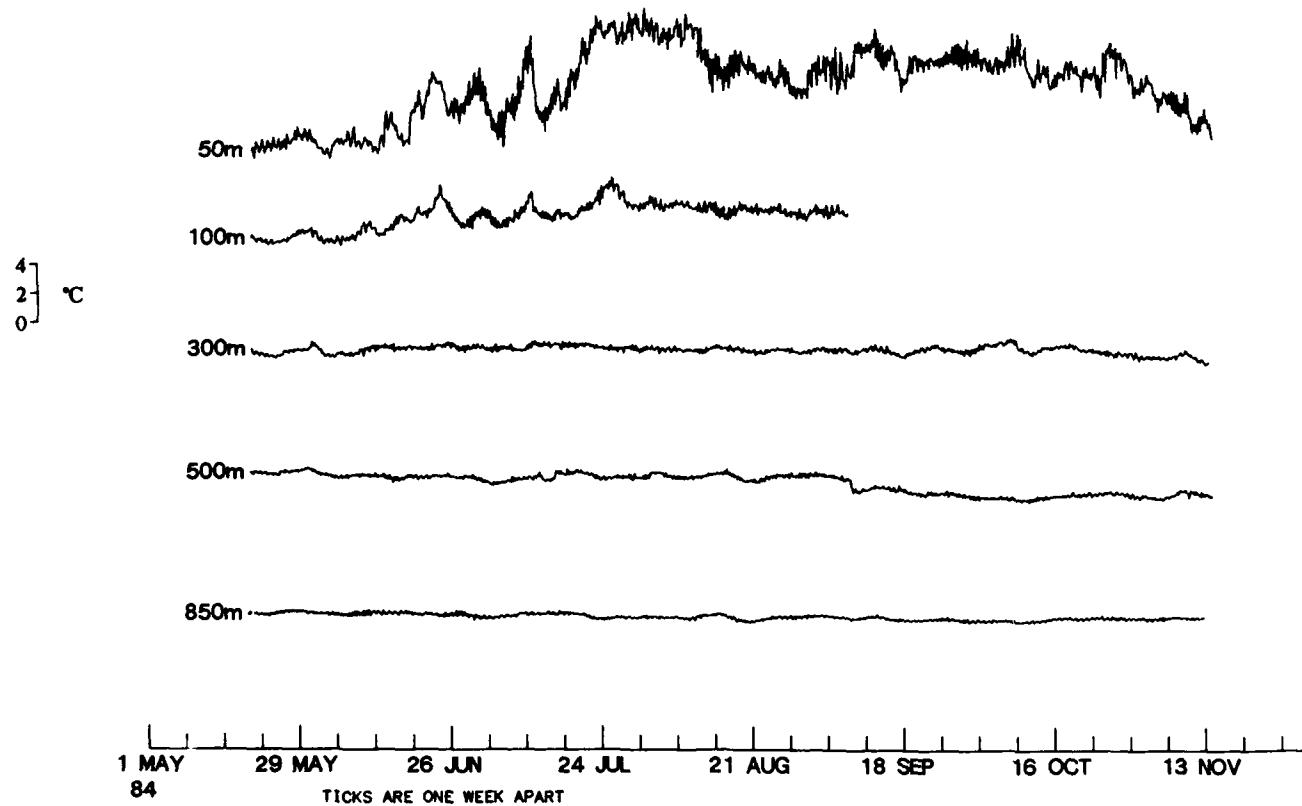


TICKS ARE ONE WEEK APART

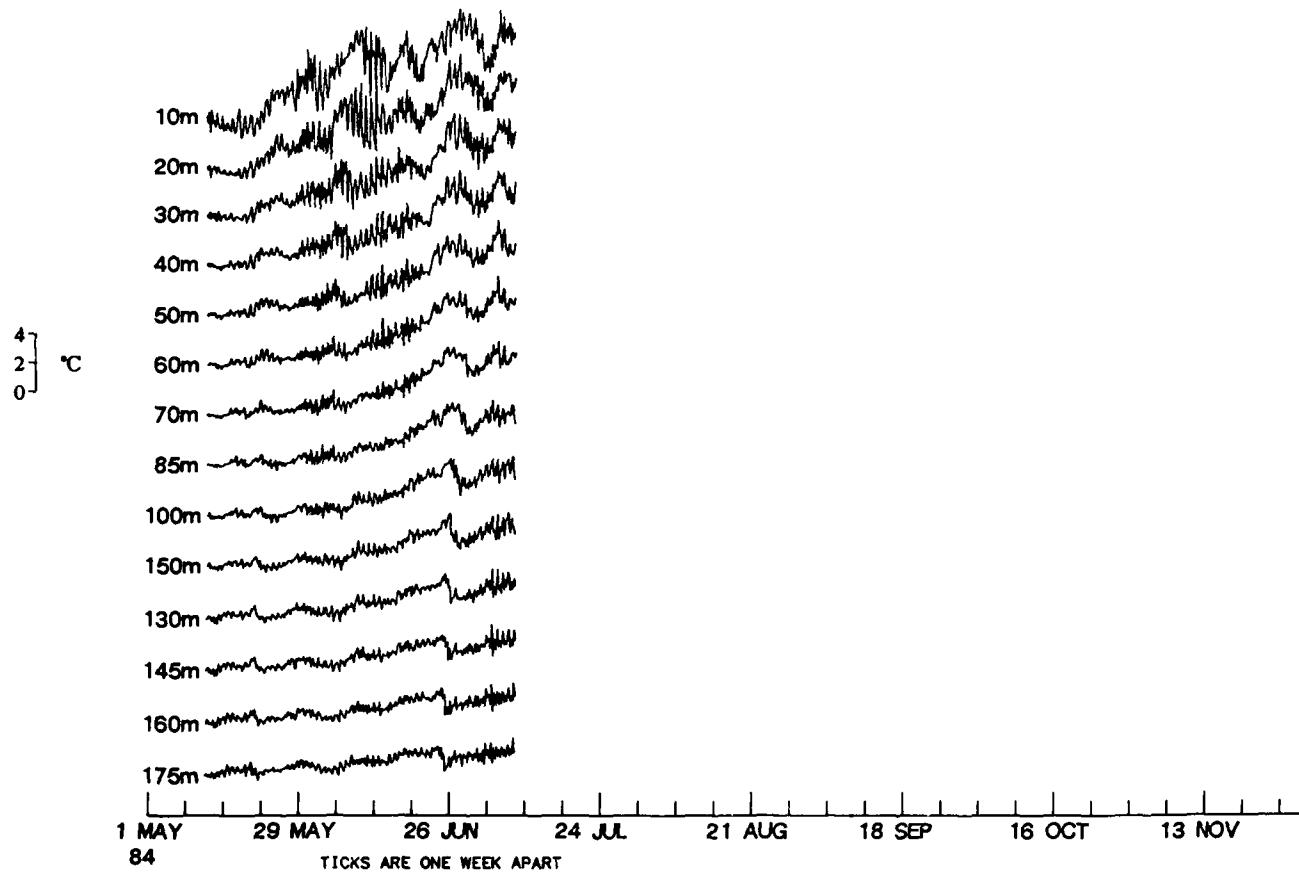
M8 : TEMPERATURE
May - Nov 84



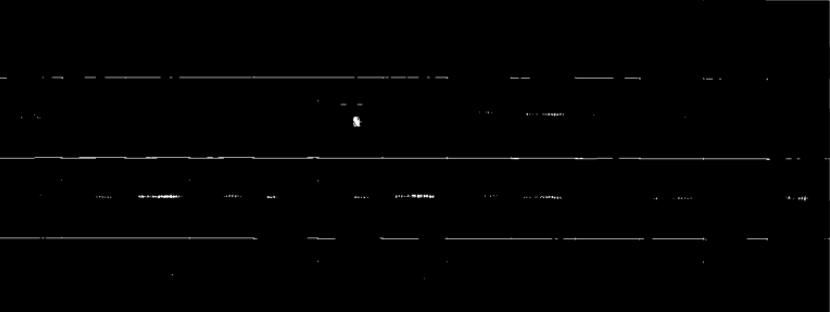
M9 : TEMPERATURE
May - Nov 84



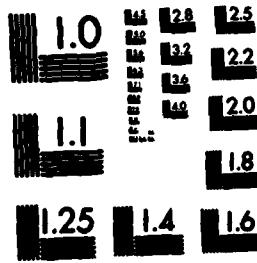
M10 : TEMPERATURE
May - Nov 84



AD-A171 432 OBSERVATIONS OF CURRENTS TEMPERATURE PRESSURE AND SEA 2/2
LEVEL IN THE GULF O. (U) SCRIPPS INSTITUTION OF
OCEANOGRAPHY LA JOLLA CA M A MERRIFIELD ET AL APR 86
UNCLASSIFIED SIO-REF-86-11 N00014-85-C-0104 F/G 8/3 NL

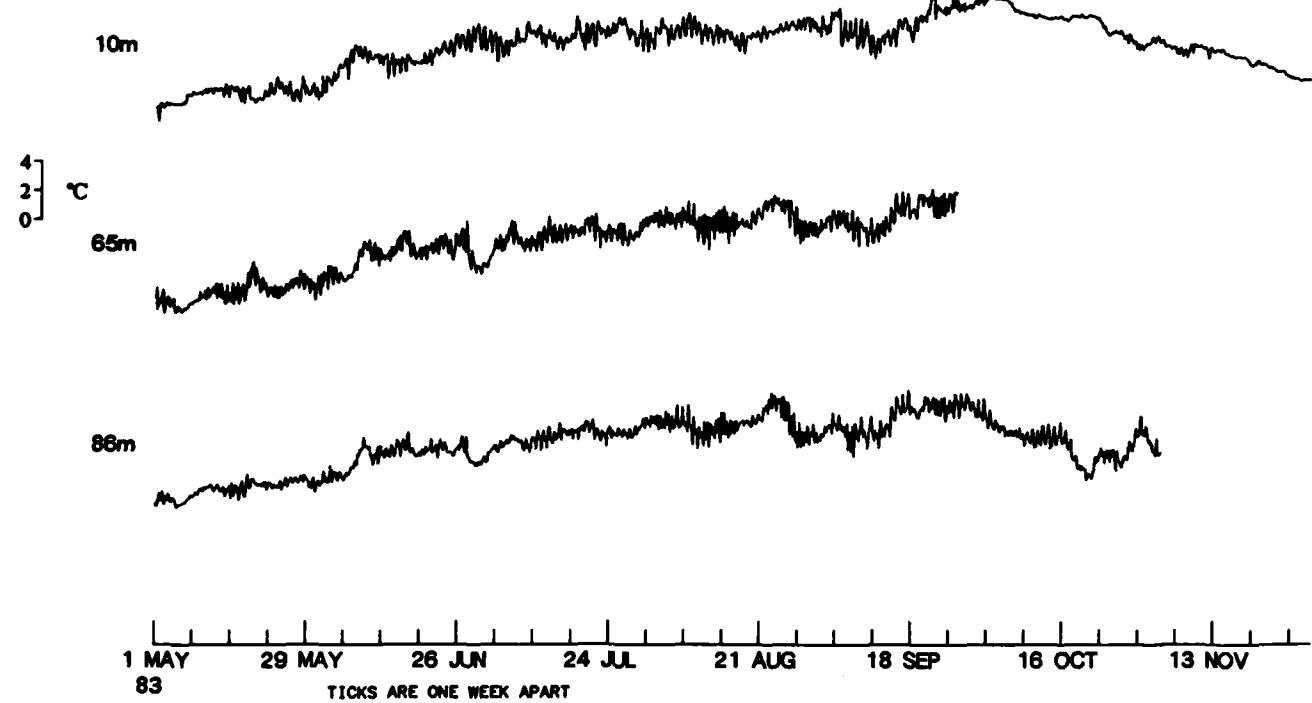


END
DATE
TIME
ID-B6

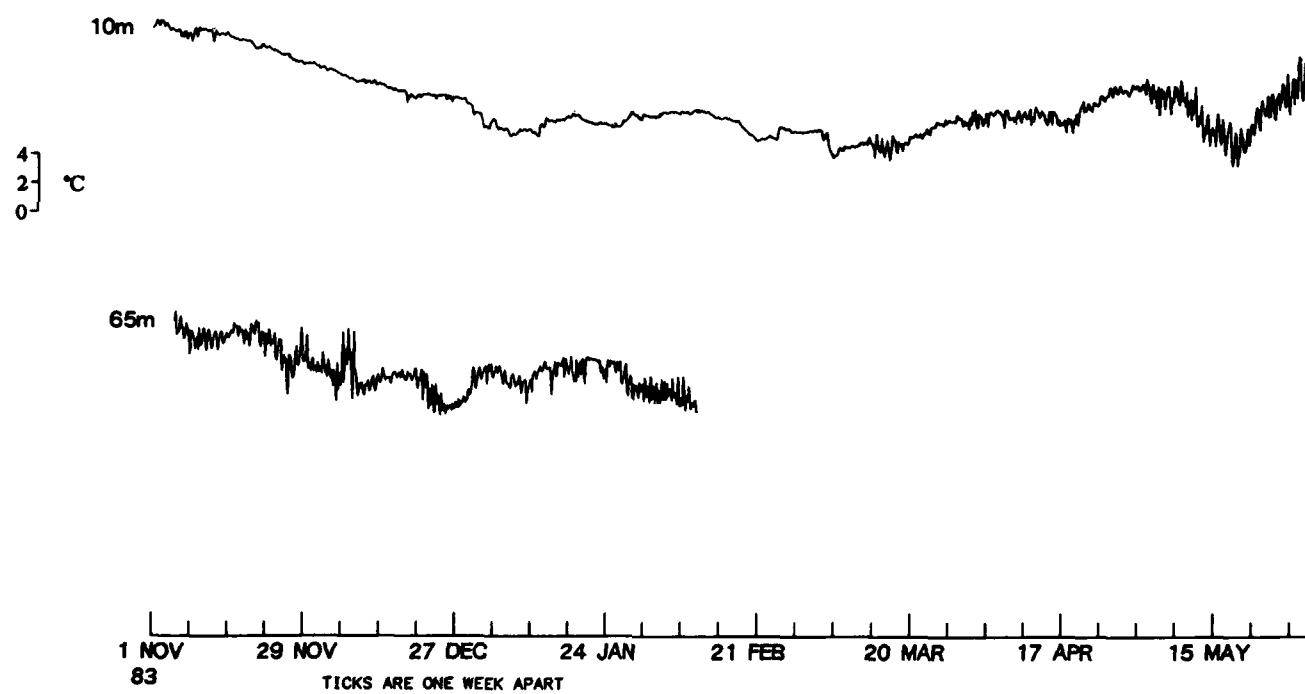


MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

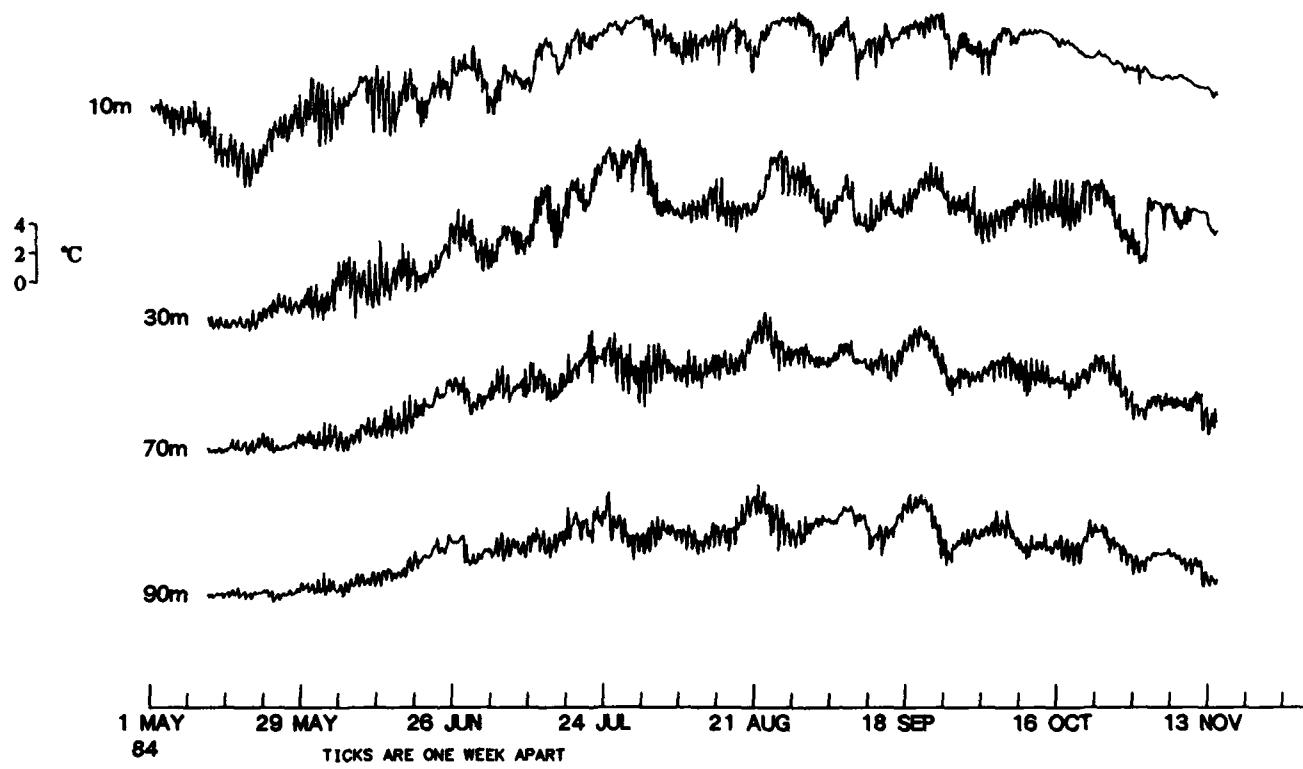
M11 : TEMPERATURE
May - Nov 83



M11 : TEMPERATURE
Nov 83 - May 84



M11 : TEMPERATURE
May - Nov 84



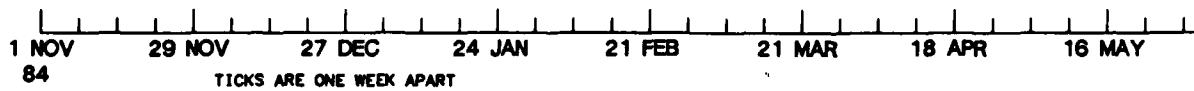
M12 : TEMPERATURE
Nov 84 - May 85

4
2
0 °C

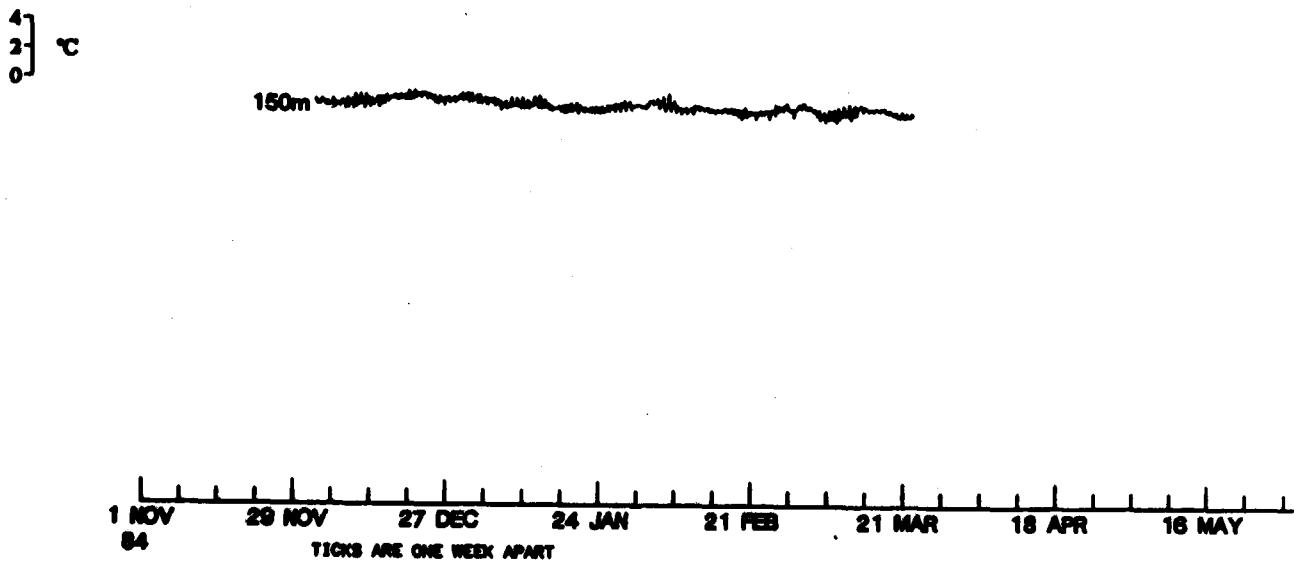
25m

150m

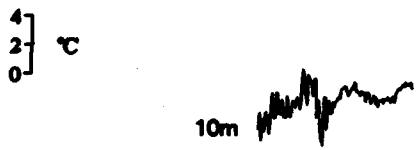
450m



M13 : TEMPERATURE
Nov 84 - May 85



M14 : TEMPERATURE
May - Nov 84



1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84

TICKS ARE ONE WEEK APART

M18 : TEMPERATURE
Nov 84 - May 85

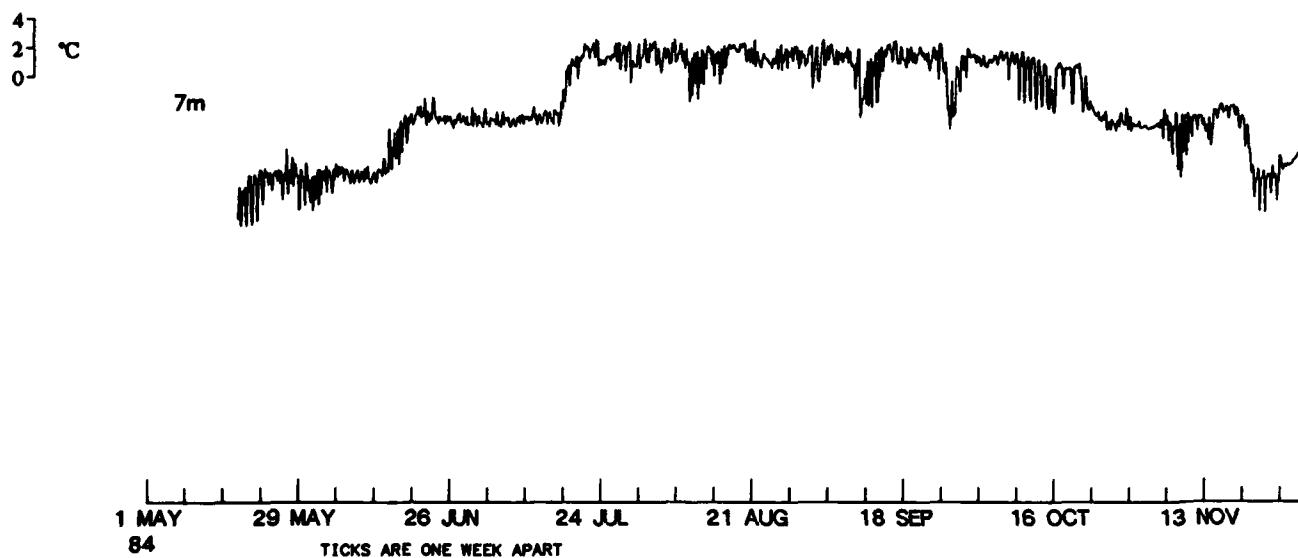
4
2
0 } °C

150m

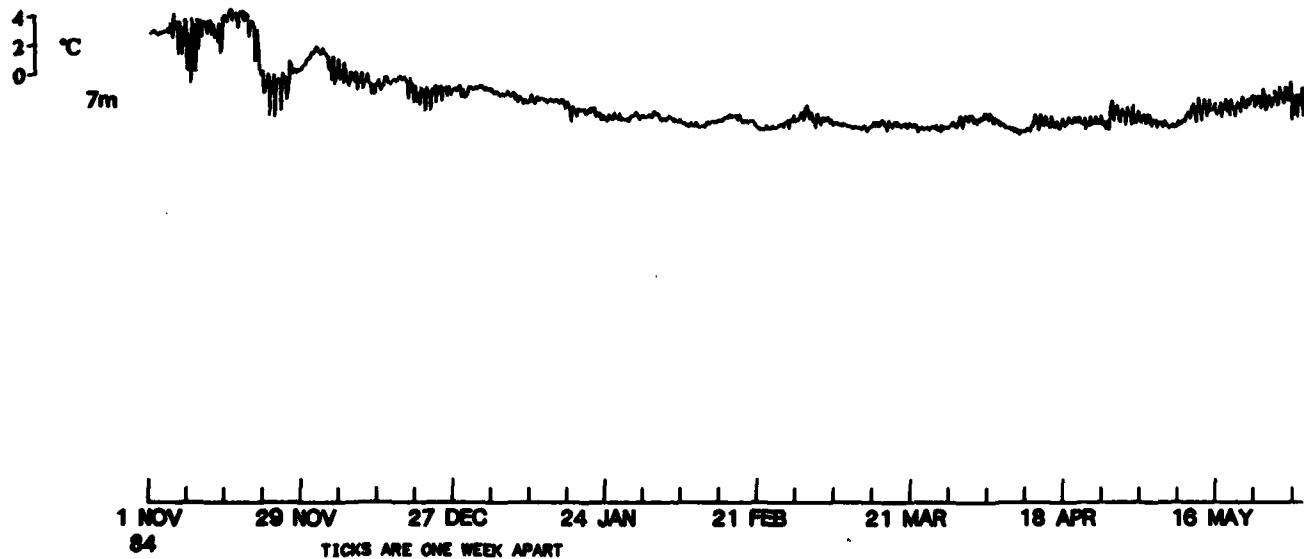
1 NOV 29 NOV 27 DEC 24 JAN 21 FEB 21 MAR 18 APR 16 MAY
84

TICKS ARE ONE WEEK APART

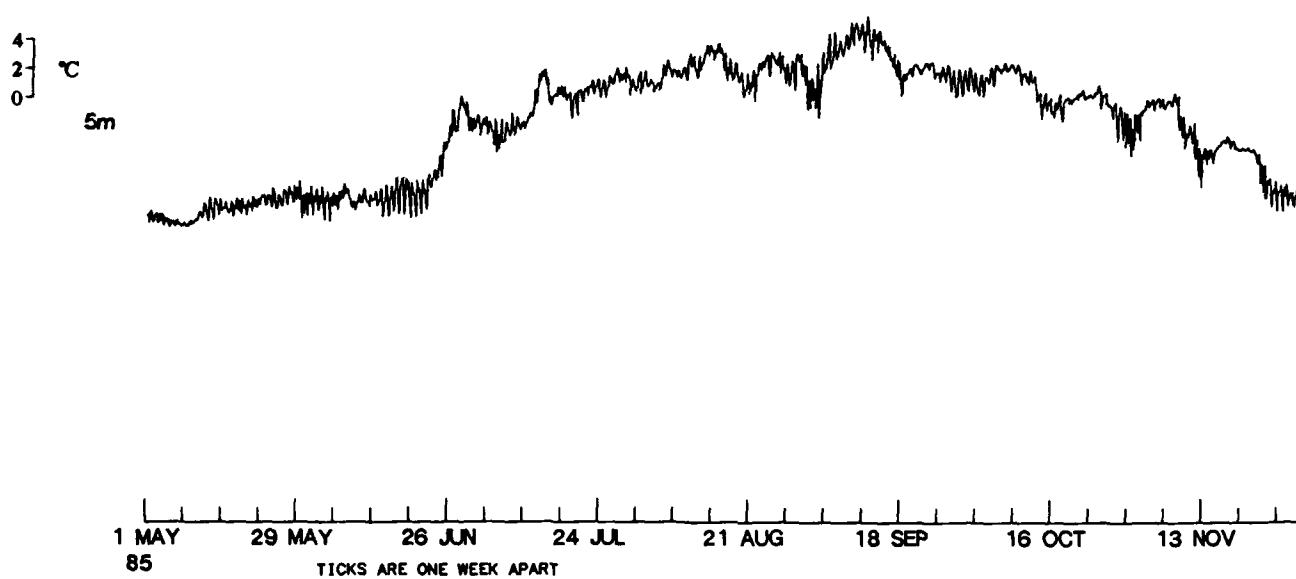
P7 : TEMPERATURE
May - Nov 84



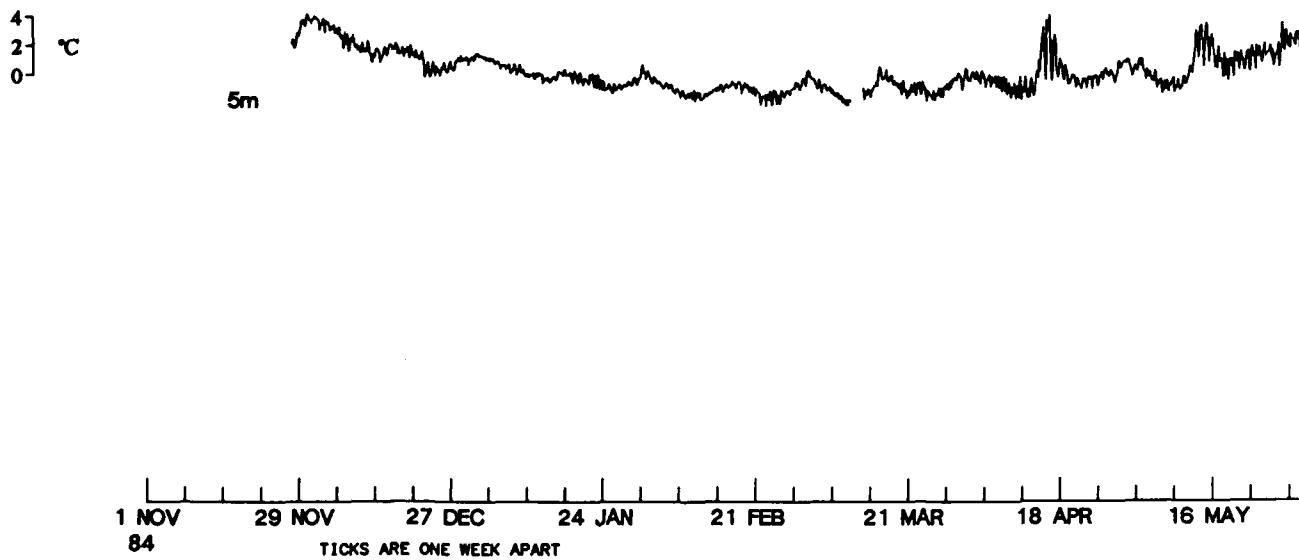
P7 : TEMPERATURE
Nov 84 - May 85



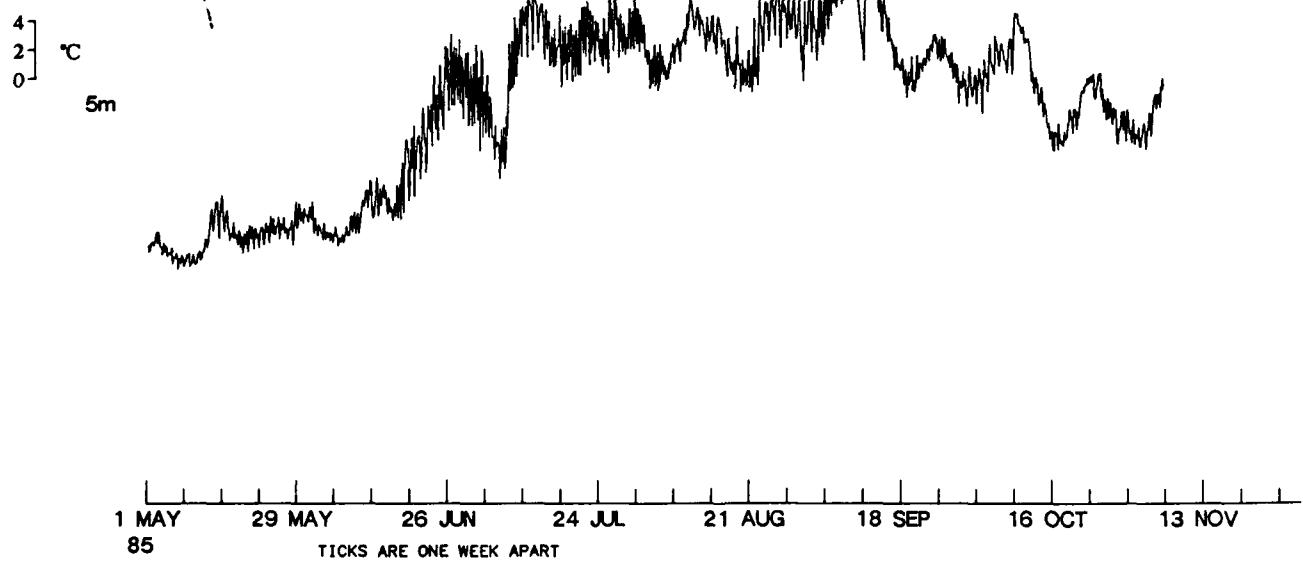
P7 : TEMPERATURE
May - Nov 85



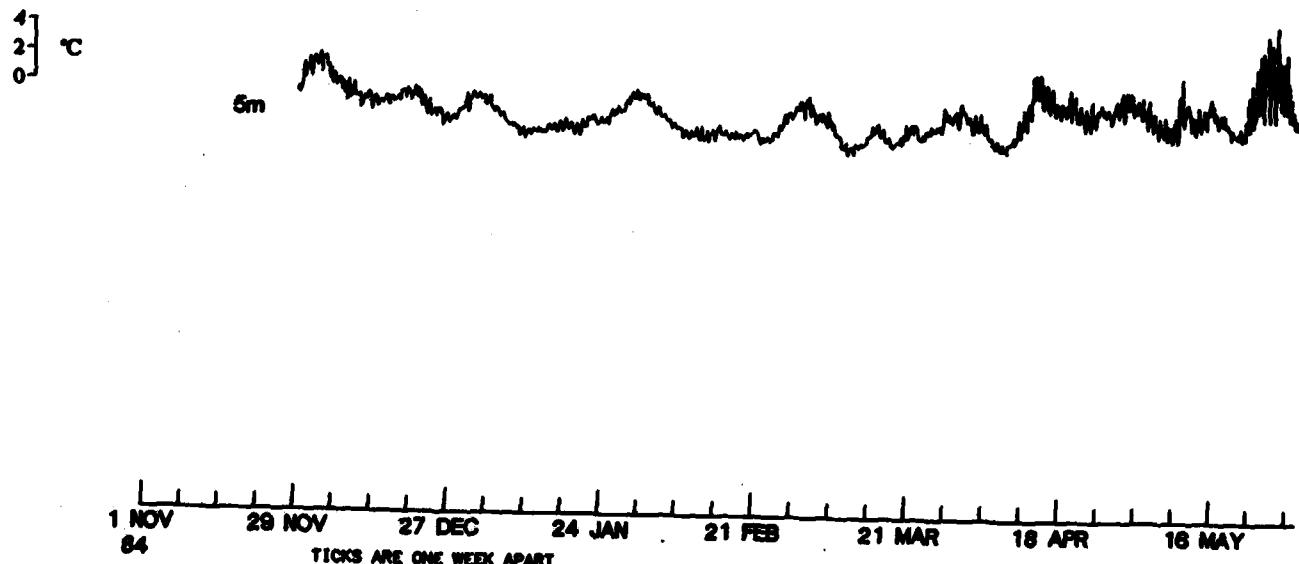
P8 : TEMPERATURE
Nov 84 - May 85



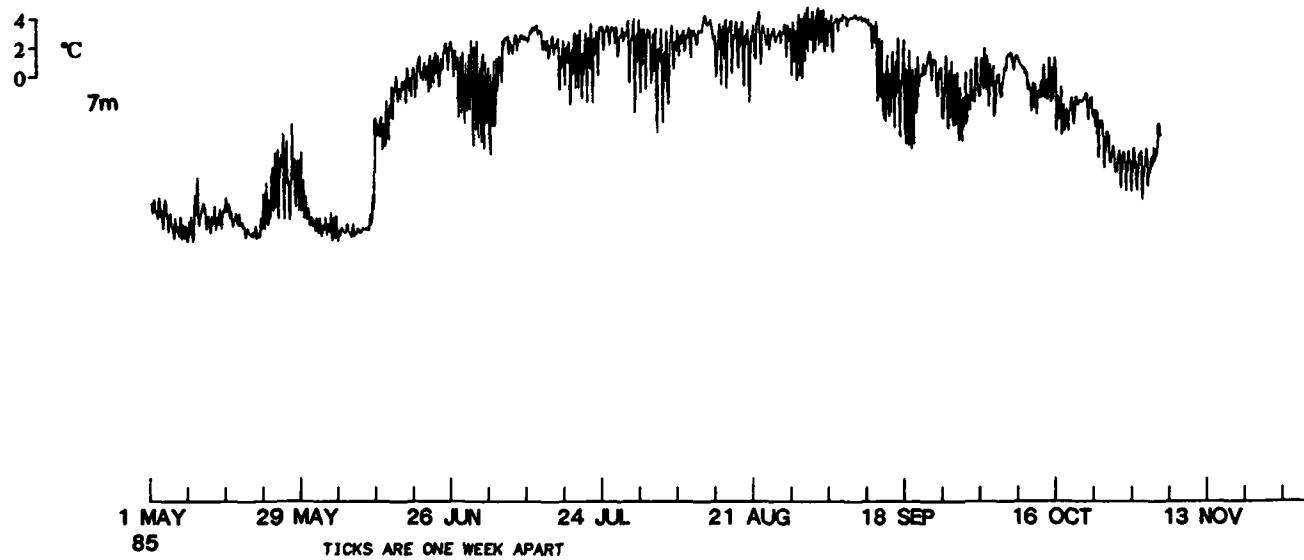
P8 : TEMPERATURE
May - Nov 85



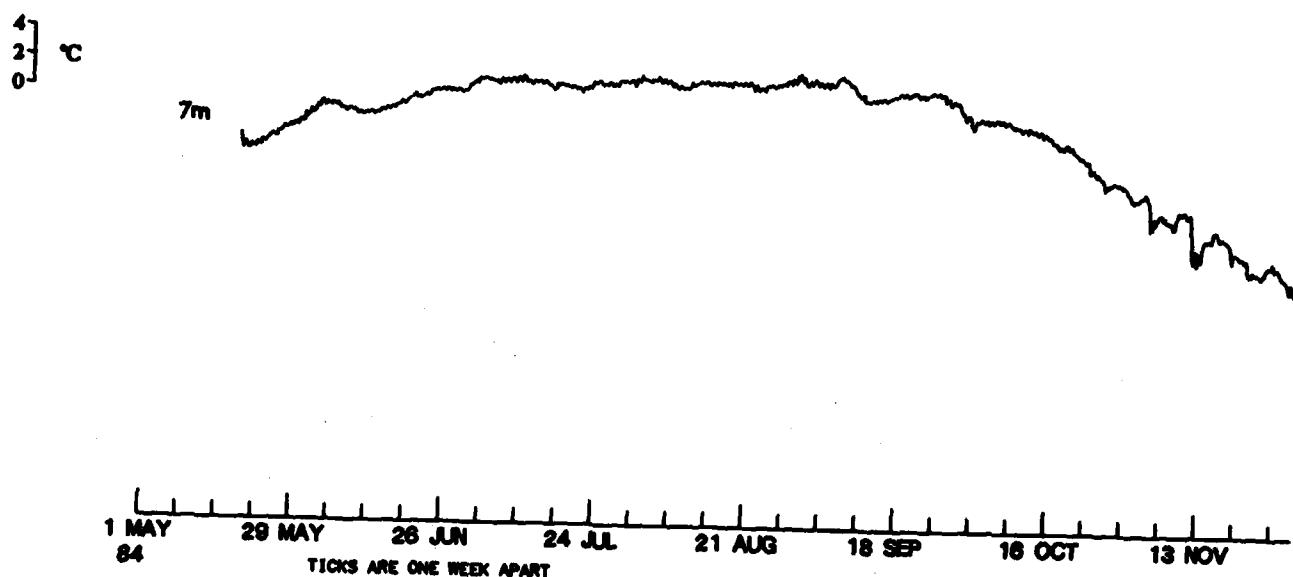
P9 : TEMPERATURE
Nov 84 - May 85



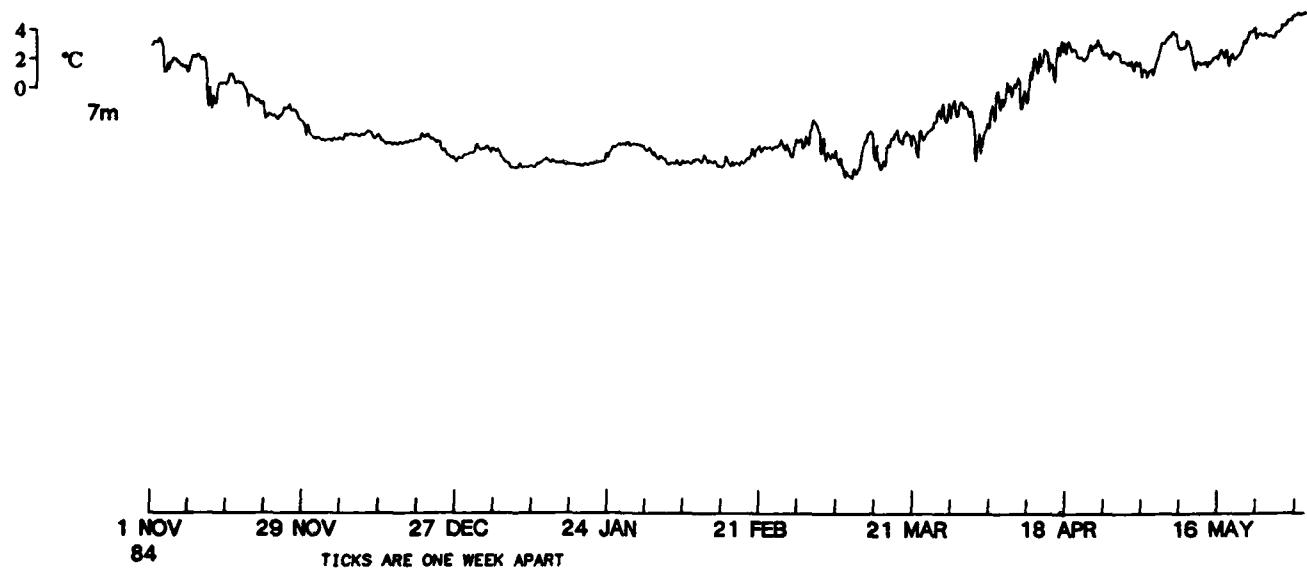
P9 : TEMPERATURE
May - Nov 85



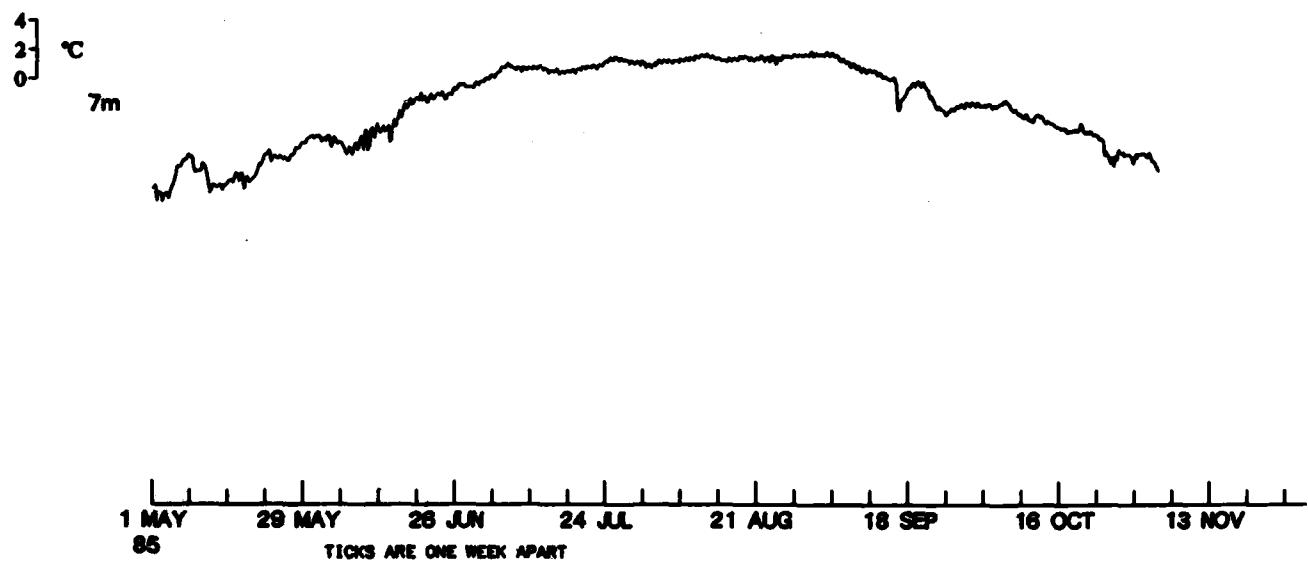
P10 : TEMPERATURE
May - Nov 84



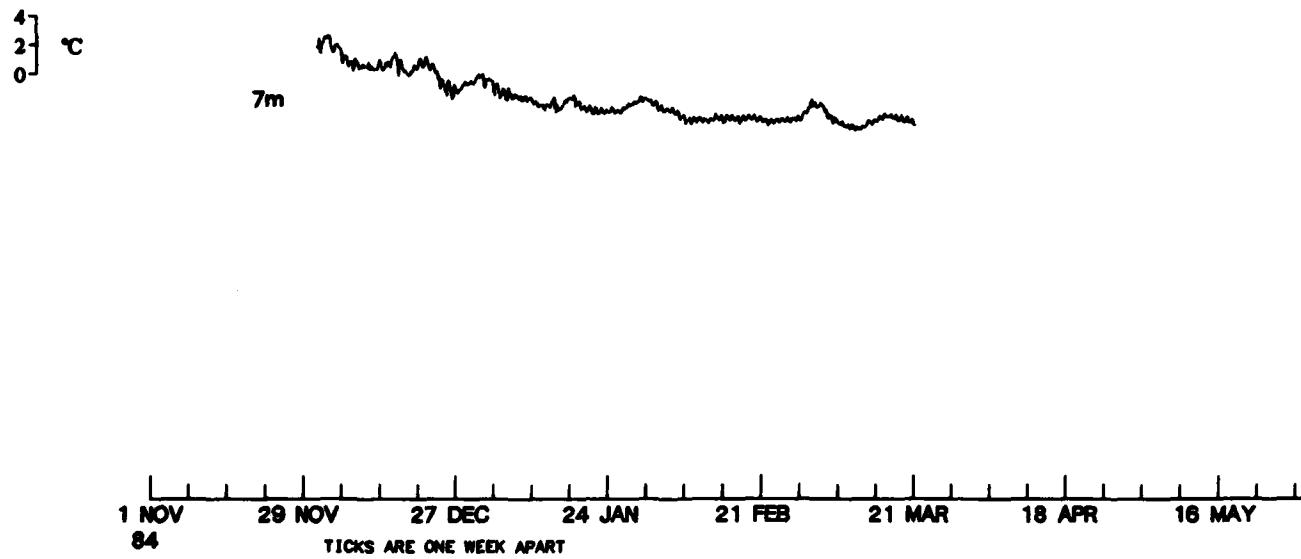
P10 : TEMPERATURE
Nov 84 - May 85

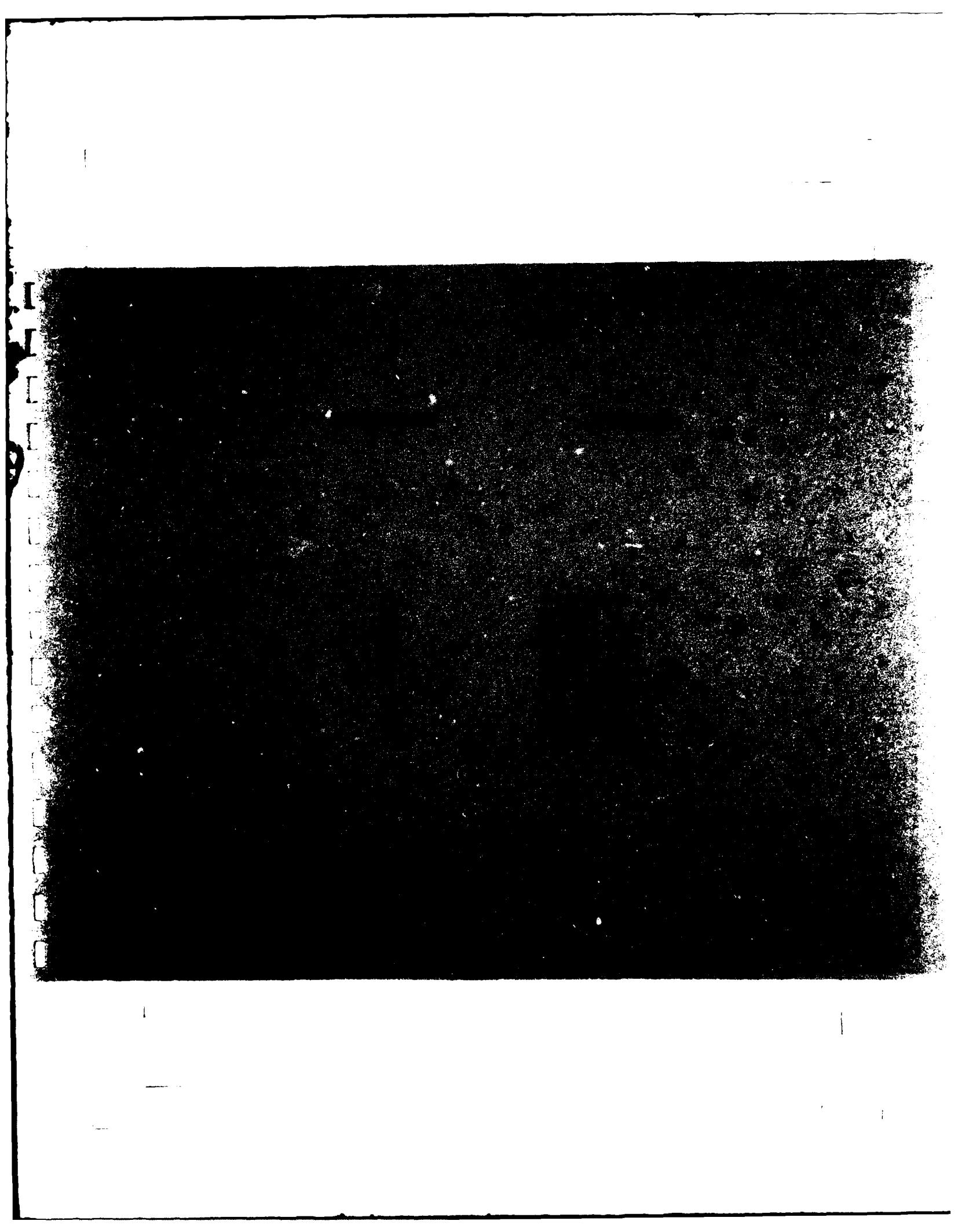


P10 : TEMPERATURE
May - Nov 85

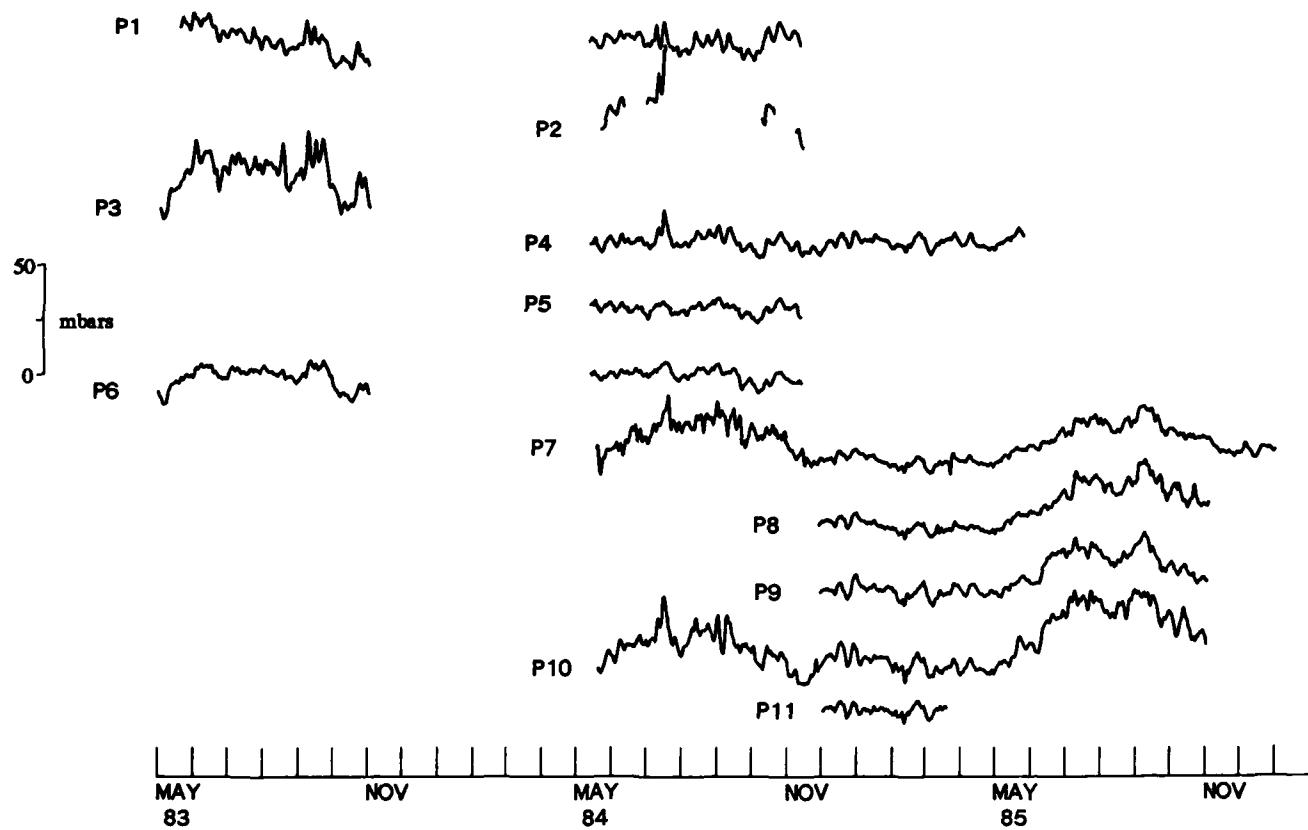


P11 : TEMPERATURE
Nov 84 - May 85



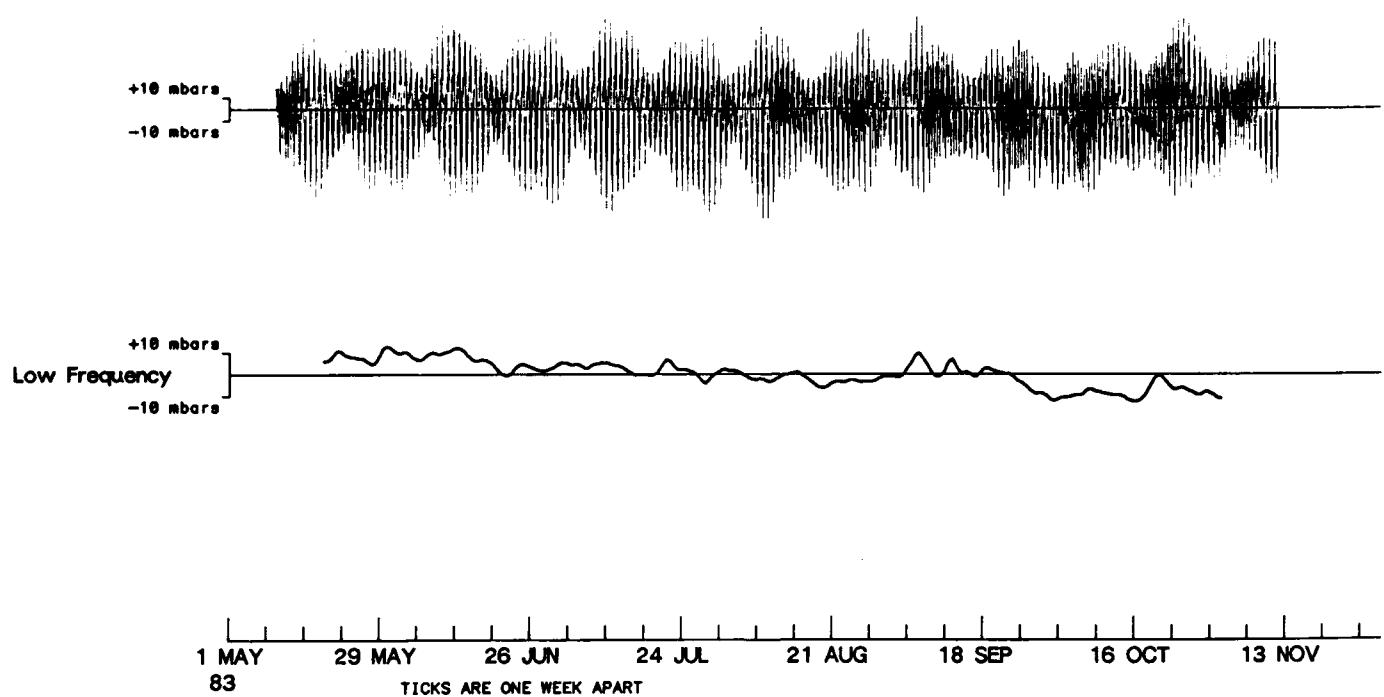


LOW FREQUENCY PRESSURE
May 83 - Jan 86



116-117-

P1 : PRESSURE
depth = 100m May - Nov 83

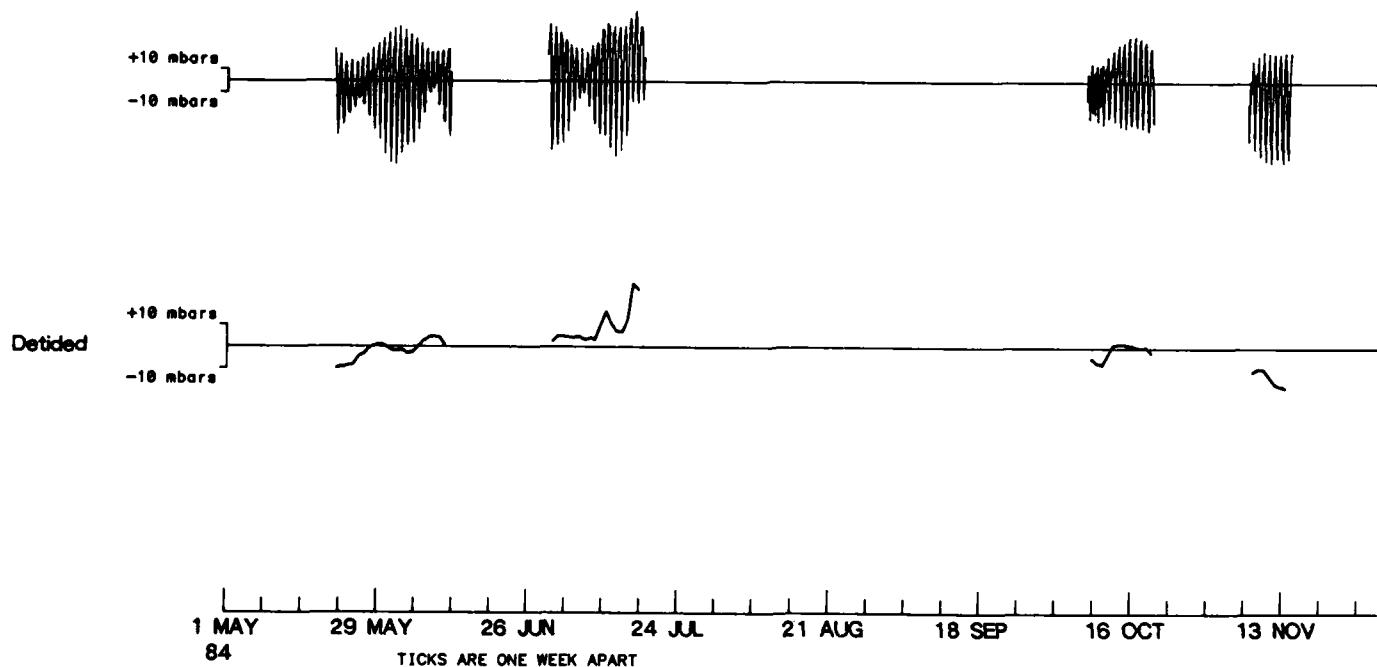


P1 : PRESSURE
depth = 100m May - Nov 84



1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84 TICKS ARE ONE WEEK APART

P2 : PRESSURE
depth = 8m May - Nov 84



P3 : PRESSURE
depth = 35m May - Nov 83



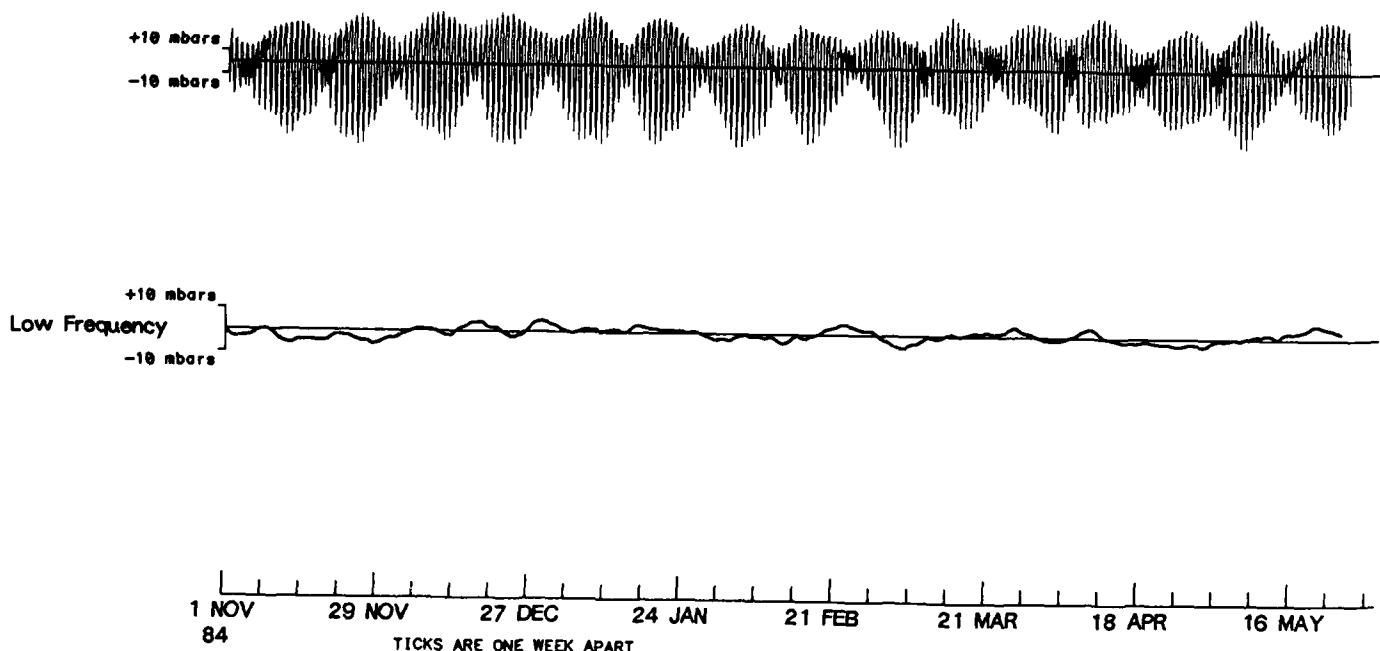
1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
83 TICKS ARE ONE WEEK APART

P4 : PRESSURE
depth = 100m May - Nov 84



1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84 TICKS ARE ONE WEEK APART

P4 : PRESSURE
depth = 100m Nov 84 - May 85



P5 : PRESSURE
depth = 200m May - Nov 84



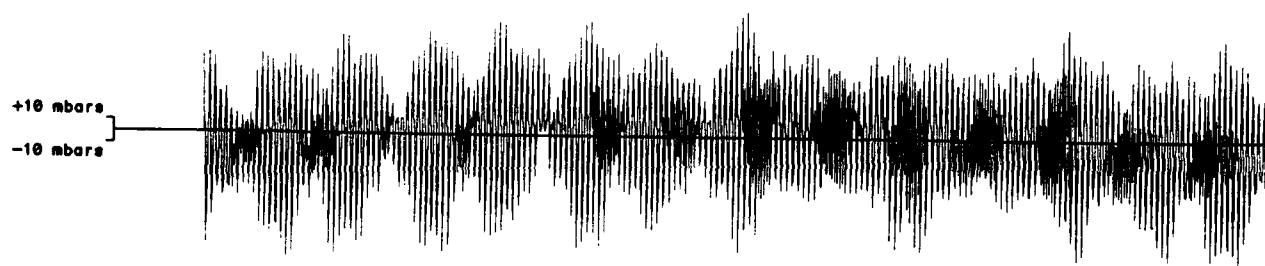
1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84 TICKS ARE ONE WEEK APART

P6 : PRESSURE
depth = 90m May - Nov 84



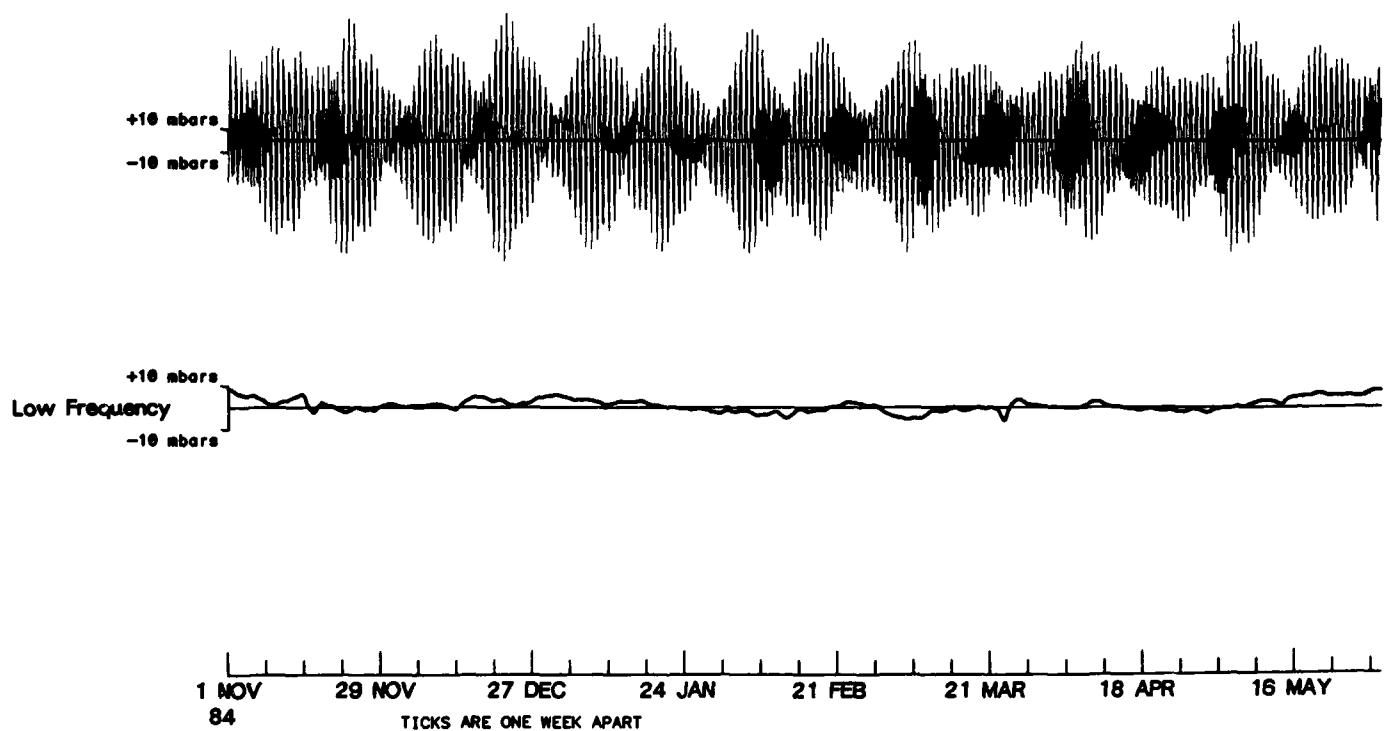
1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84 TICKS ARE ONE WEEK APART

P7 : PRESSURE
depth = 7m May - Nov 84

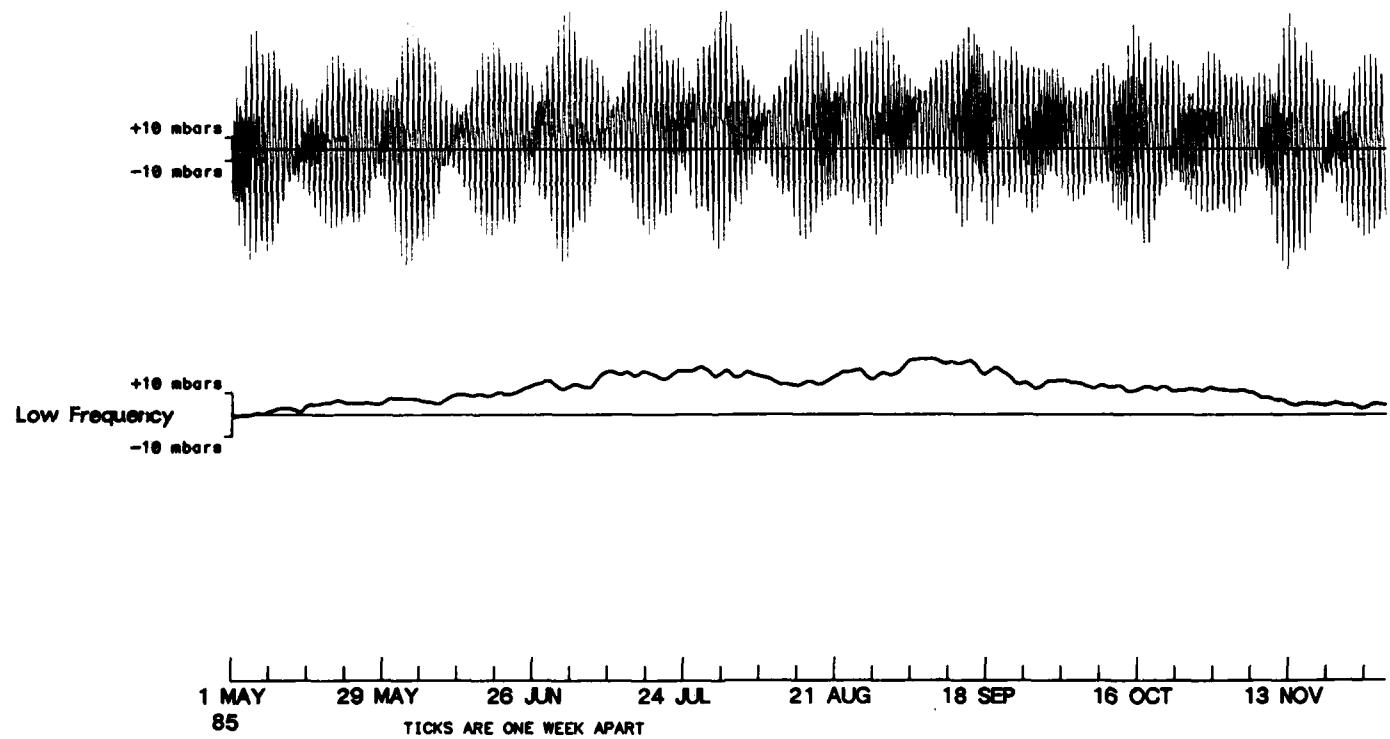


1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84 TICKS ARE ONE WEEK APART

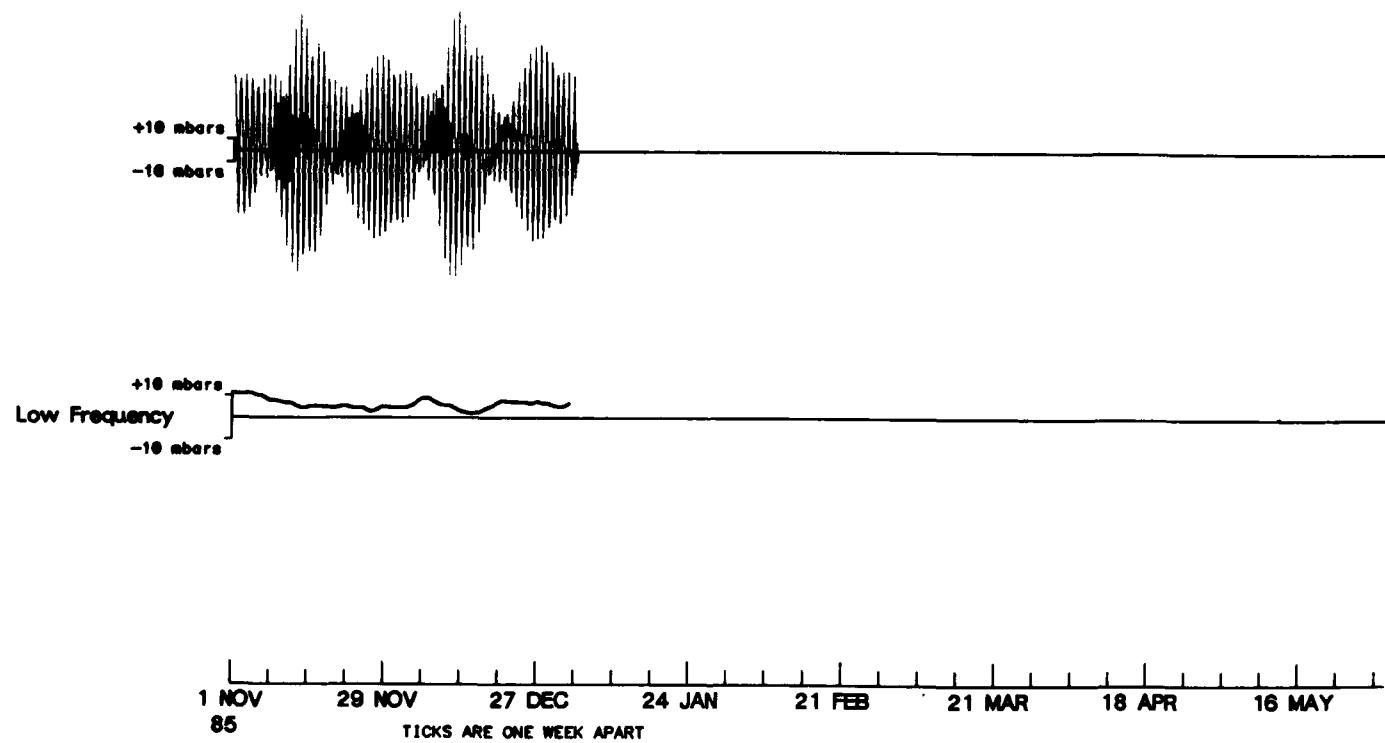
P7 : PRESSURE
depth = 7m Nov 84 - May 85



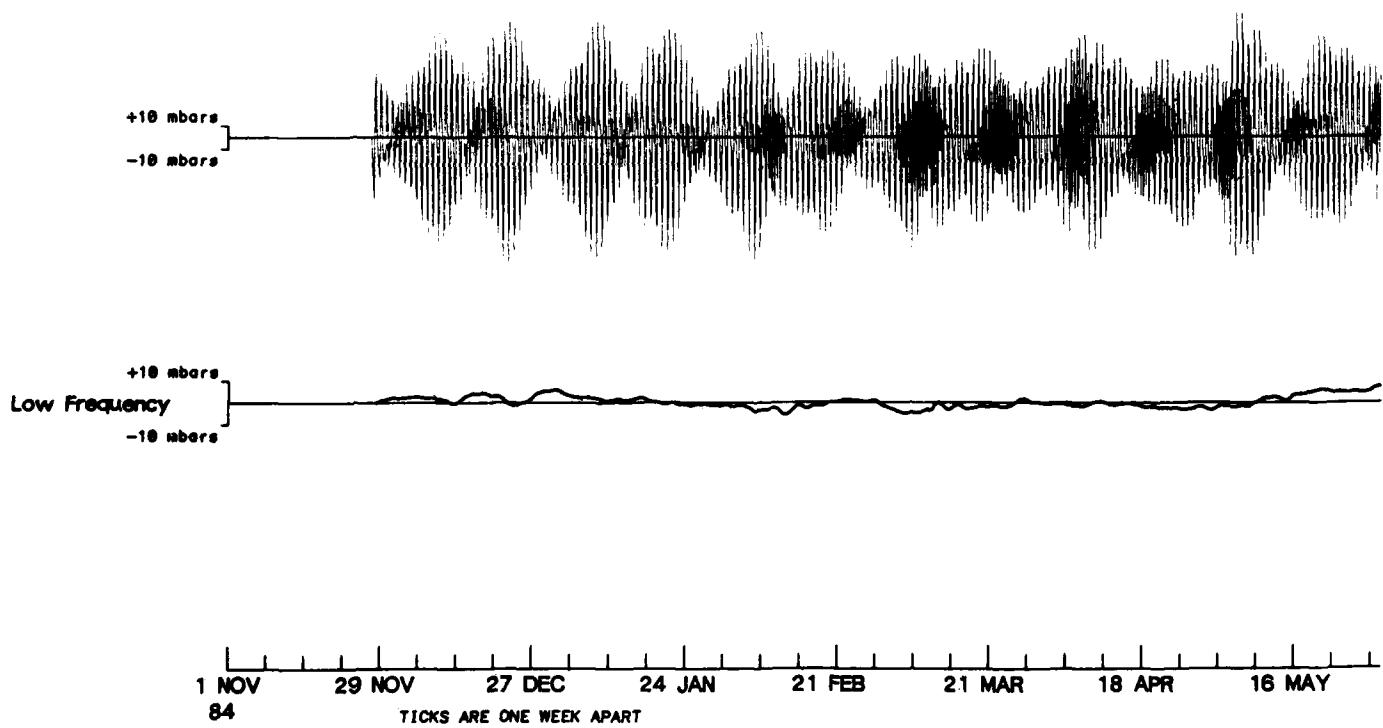
P7 : PRESSURE
depth = 7m May - Nov 85



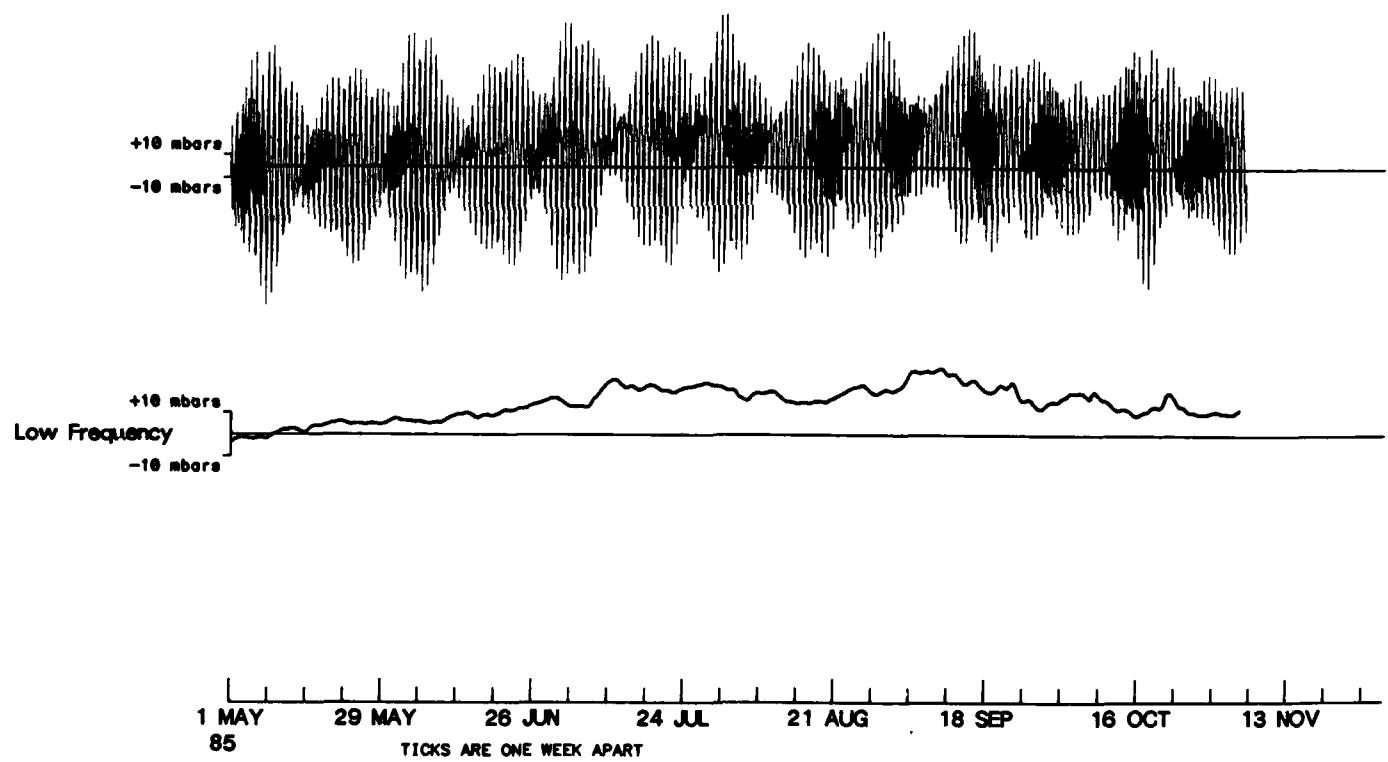
P7 : PRESSURE
depth = 7m Nov 85 - May 86



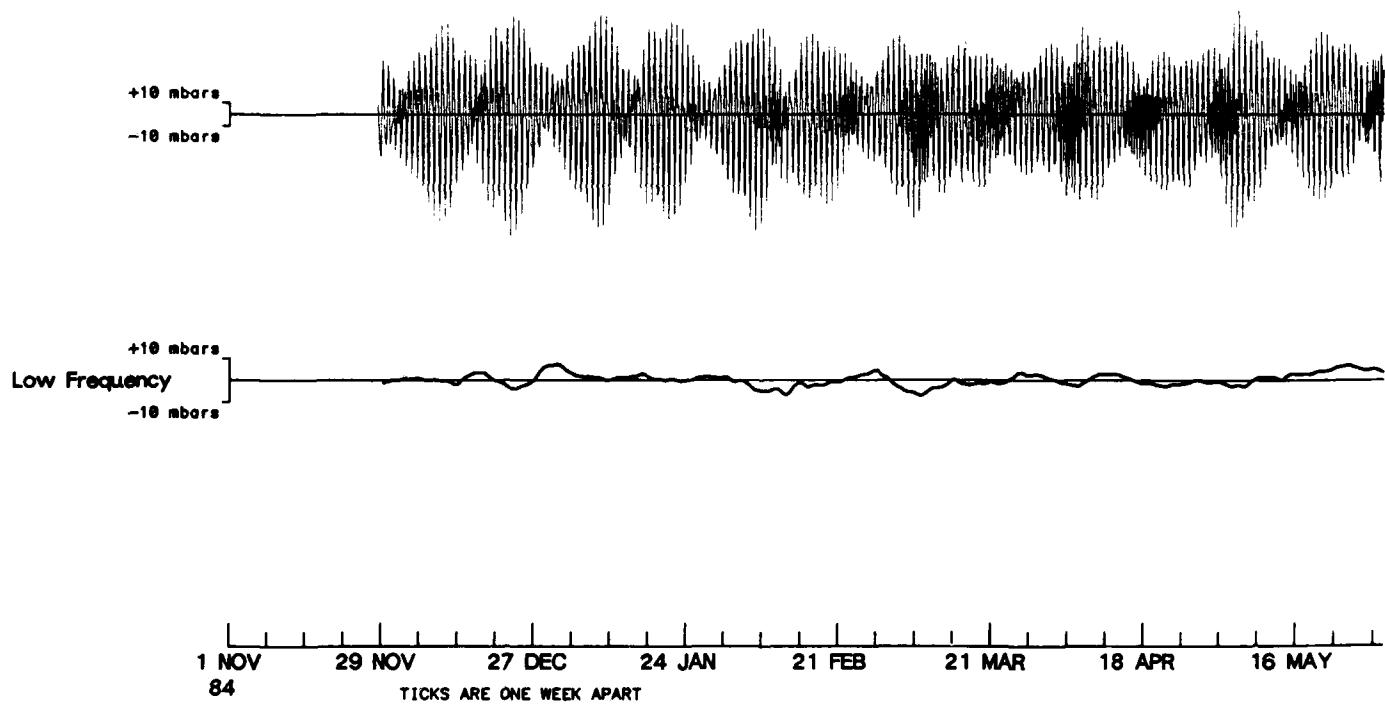
P8 : PRESSURE
depth = 5m Nov 84 - May 85



P8 : PRESSURE
depth = 5m May - Nov 85



P9 : PRESSURE
depth = 5m Nov 84 - May 85



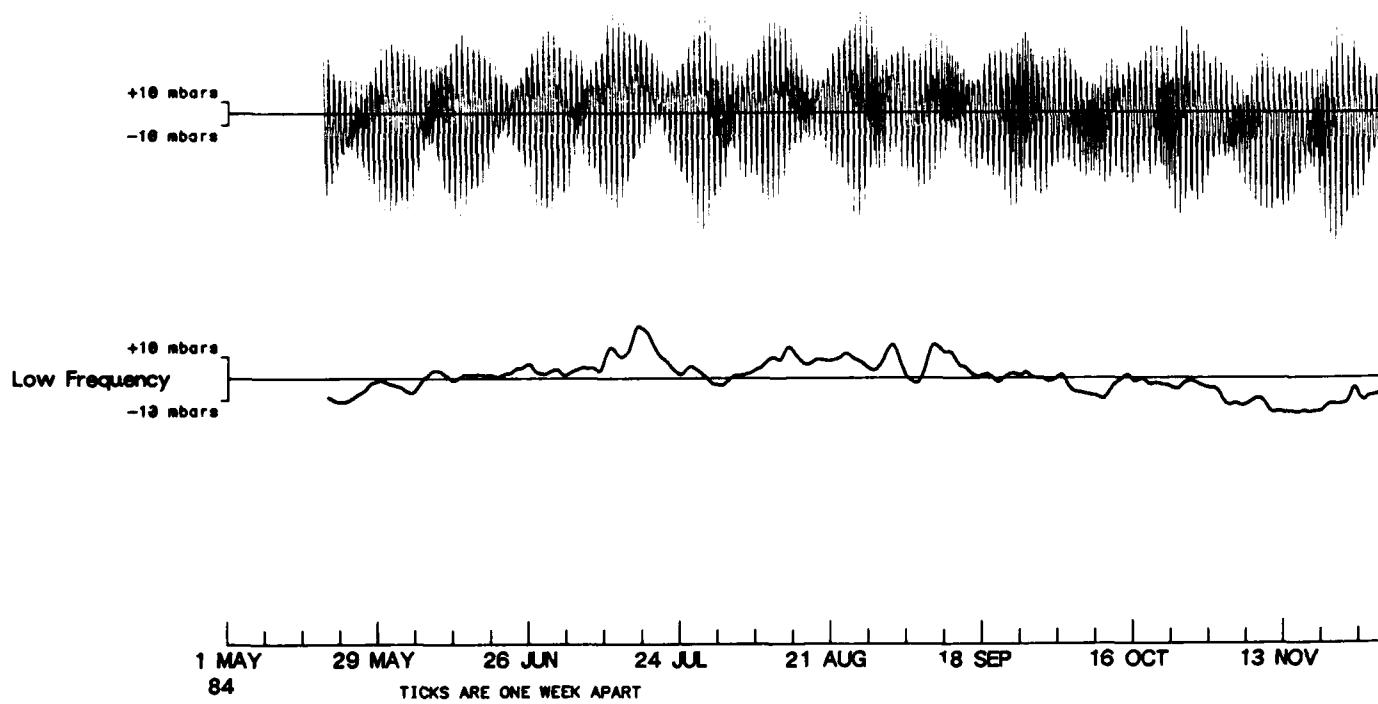
P9 : PRESSURE
depth = 5m May - Nov 85



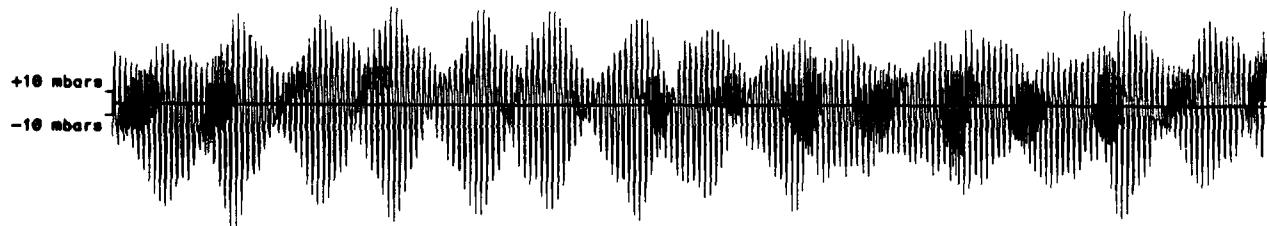
1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
85

TICKS ARE ONE WEEK APART

P10 : PRESSURE
depth = 7m May - Nov 84

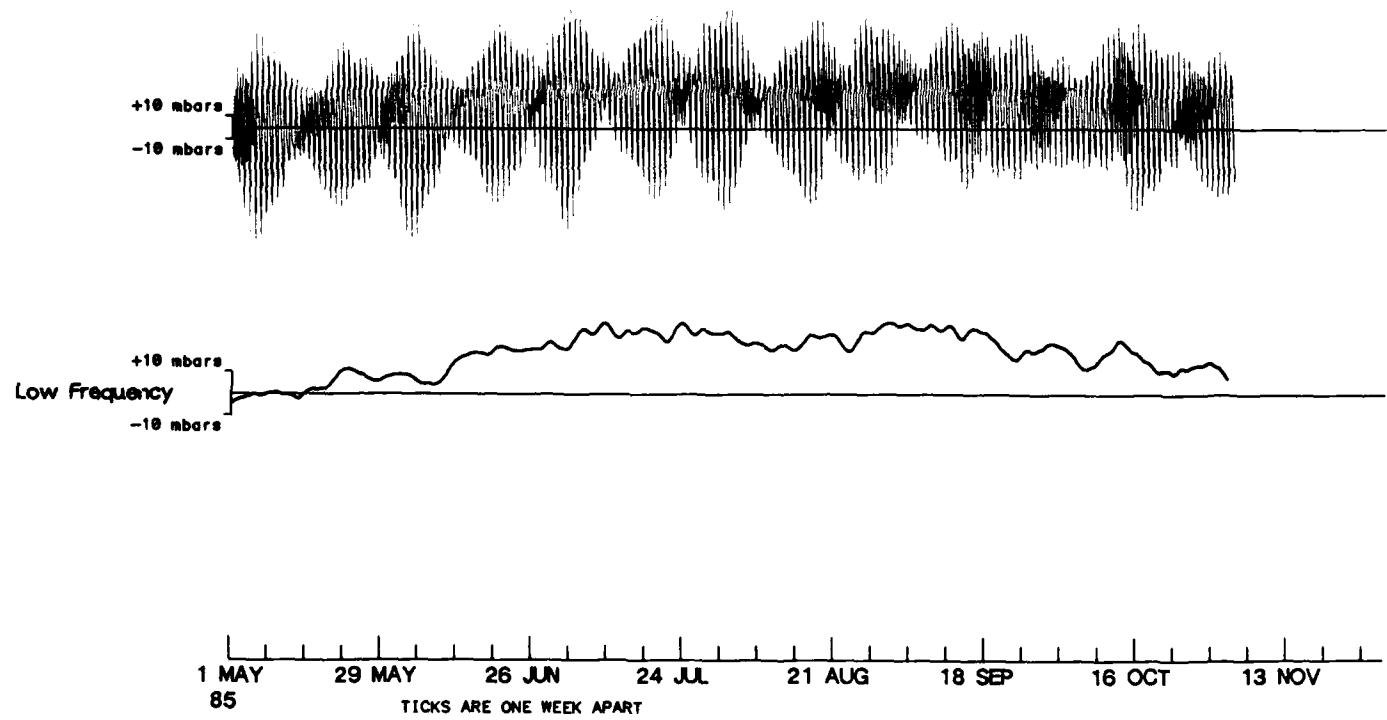


P10 : PRESSURE
depth = 7m Nov 84 - May 85

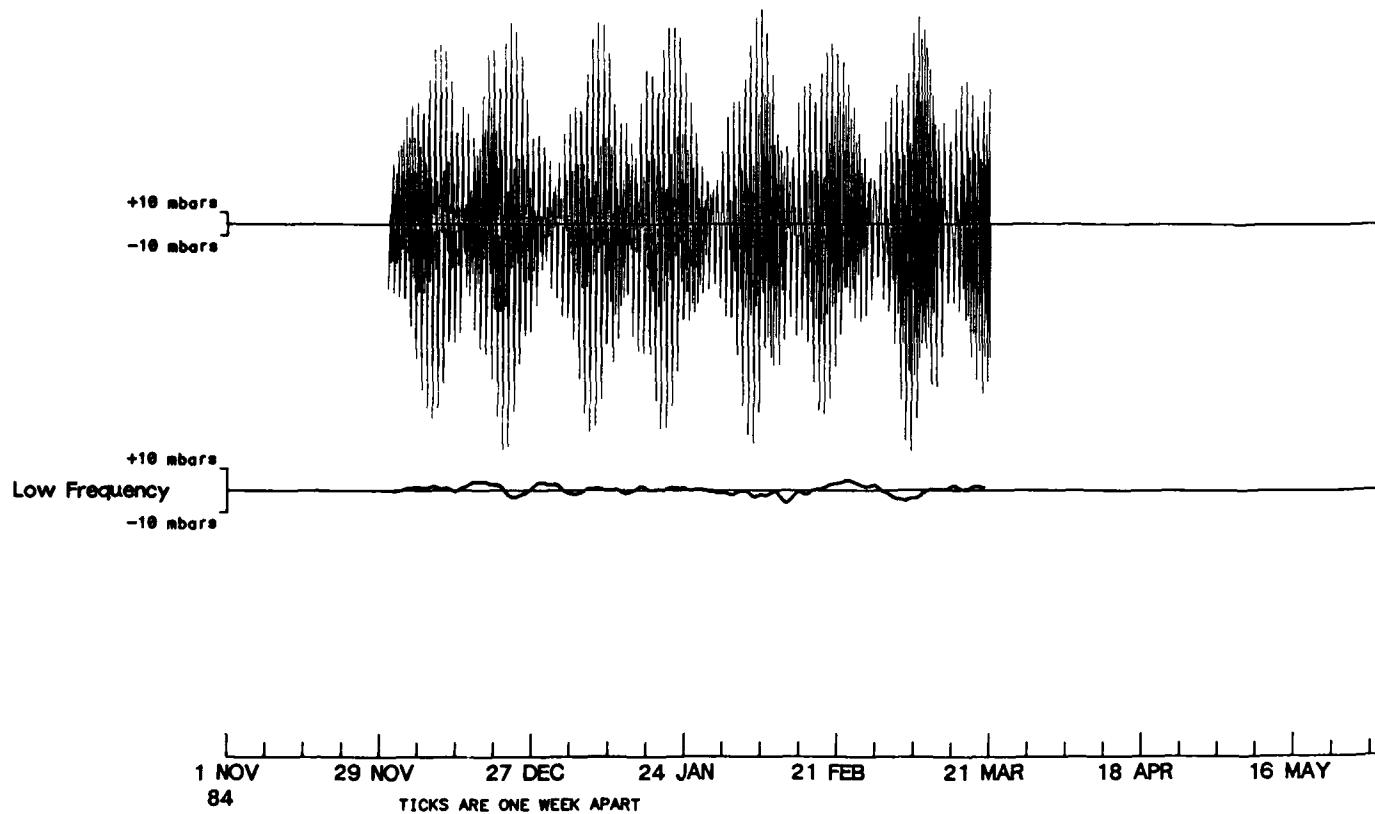


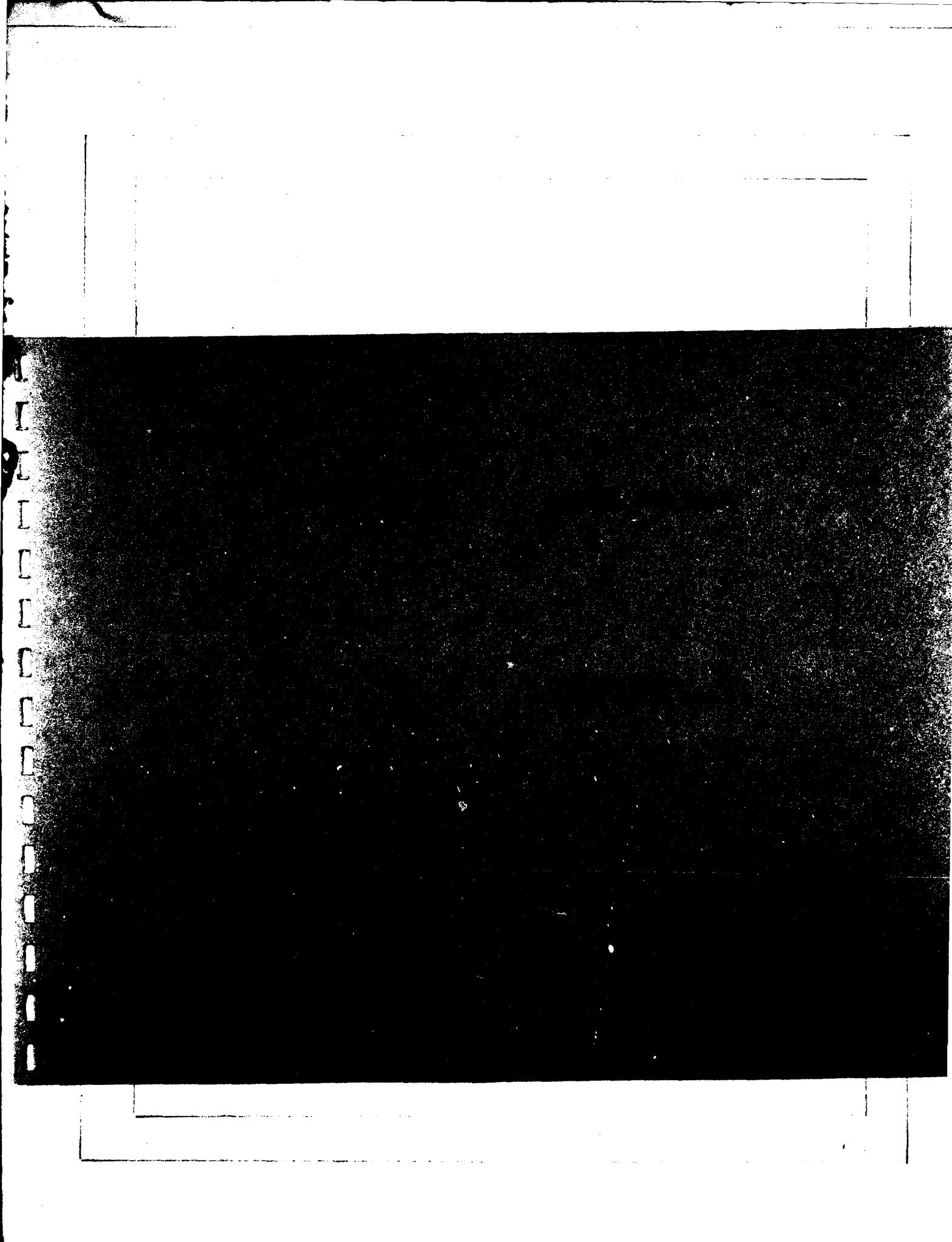
1 NOV 29 NOV 27 DEC 24 JAN 21 FEB 21 MAR 18 APR 16 MAY
84 TICKS ARE ONE WEEK APART

P10 : PRESSURE
depth = 7m May - Nov 85

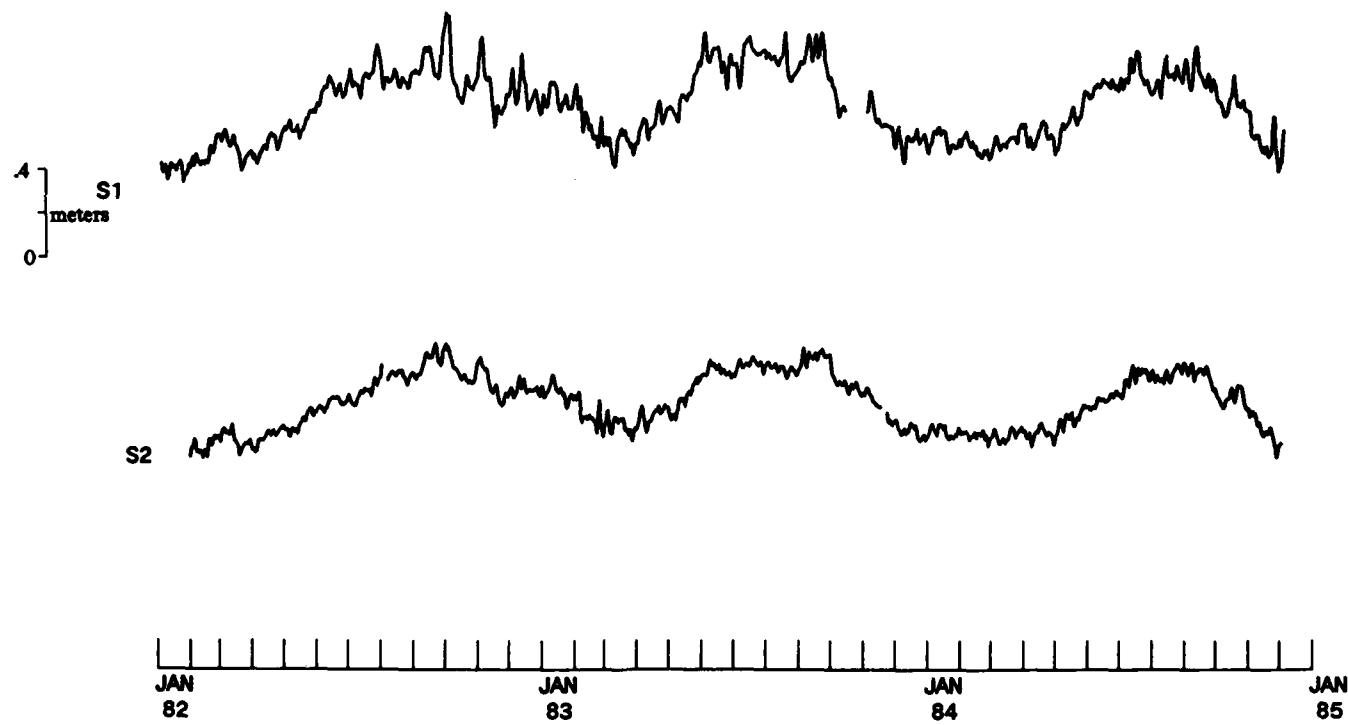


P11 : PRESSURE
depth = 5m Nov 84 - May 85



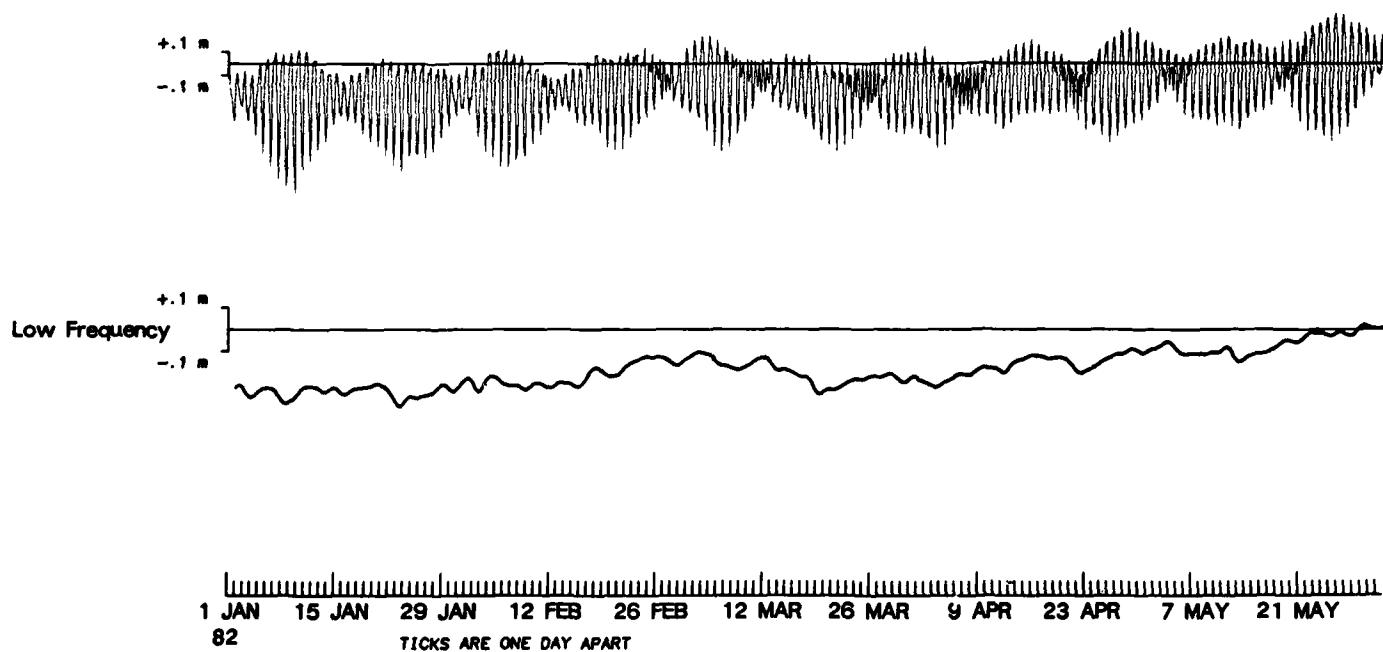


LOW FREQUENCY SEA LEVEL
Jan 82 - Dec 84

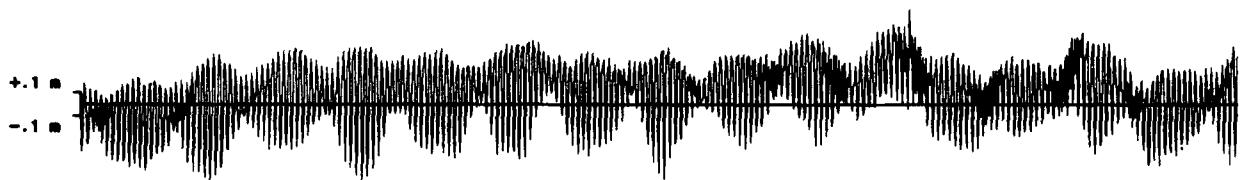


140/-141-

S1 : SEA LEVEL
Jan - May 82

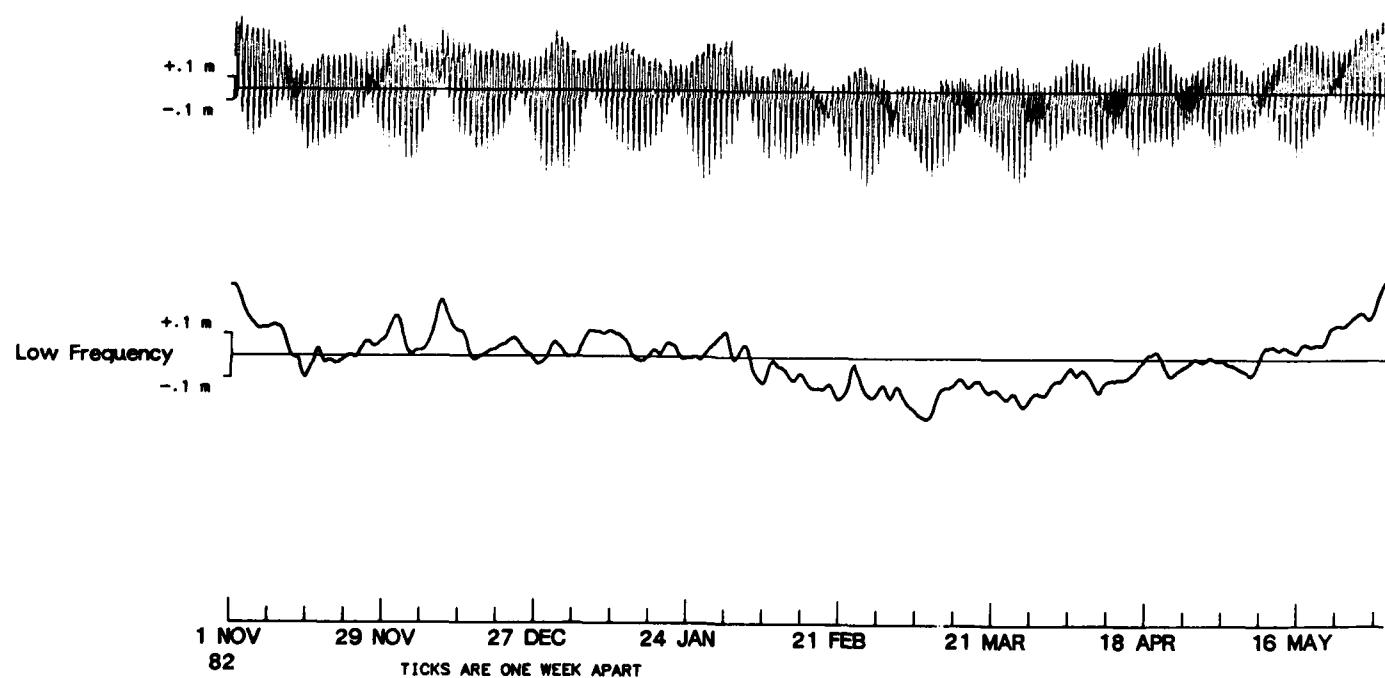


S1 : SEA LEVEL
May - Nov 82

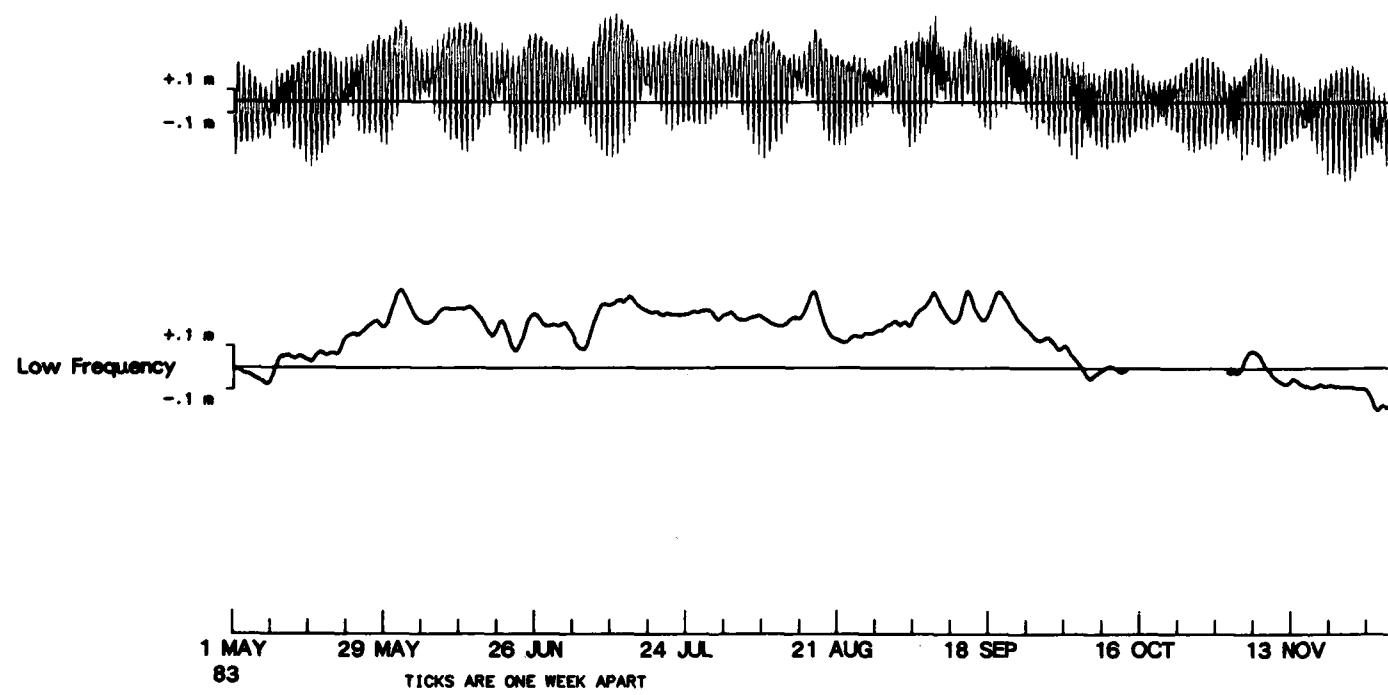


1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
82 TICKS ARE ONE WEEK APART

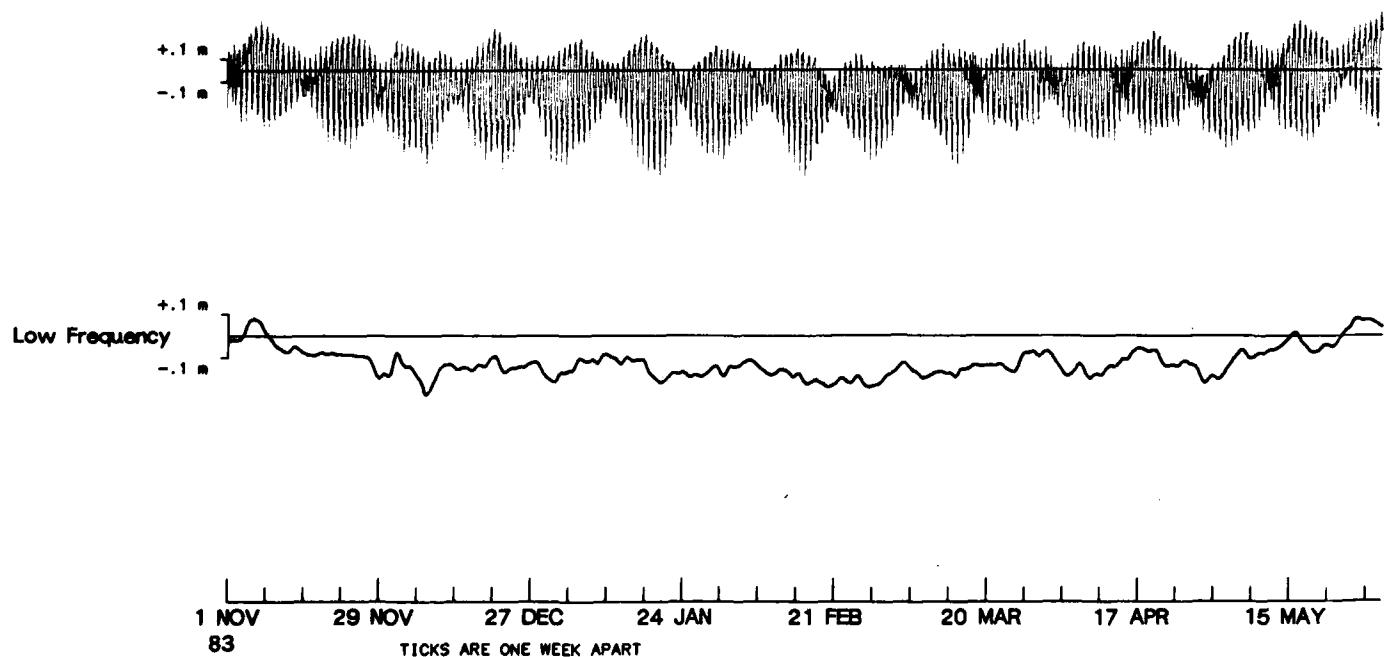
S1 : SEA LEVEL
November 1982 - May 1983



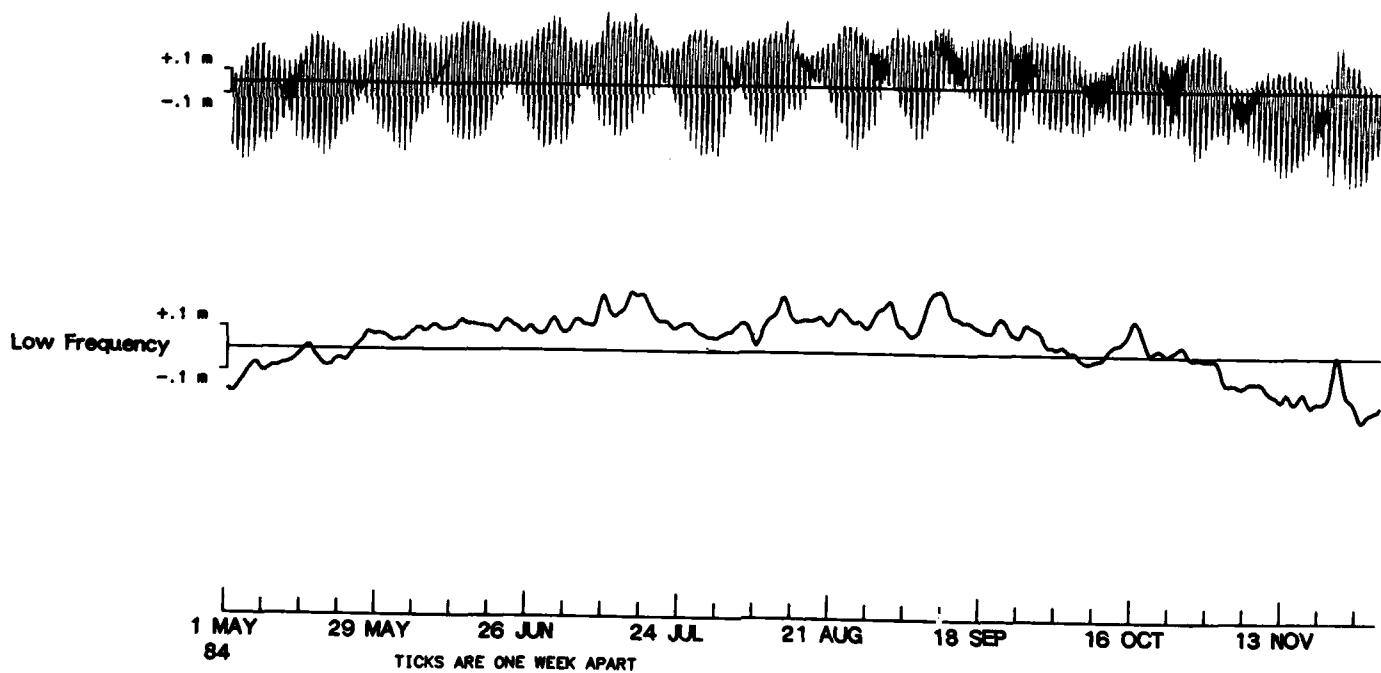
S1 : SEA LEVEL
May - November 1983



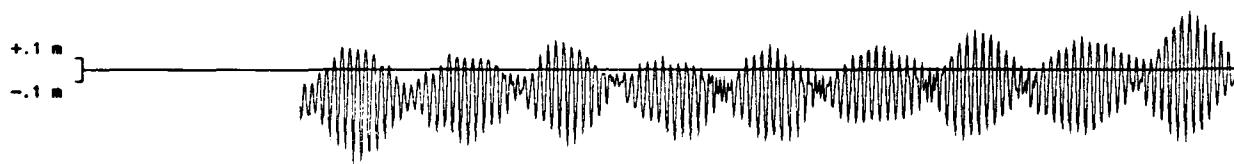
S1 : SEA LEVEL
November 1983 - May 1984



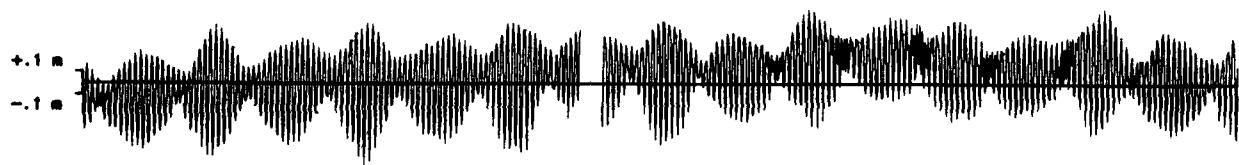
S1 : SEA LEVEL
May - November 1984



S2 : SEA LEVEL
Jan - May 82

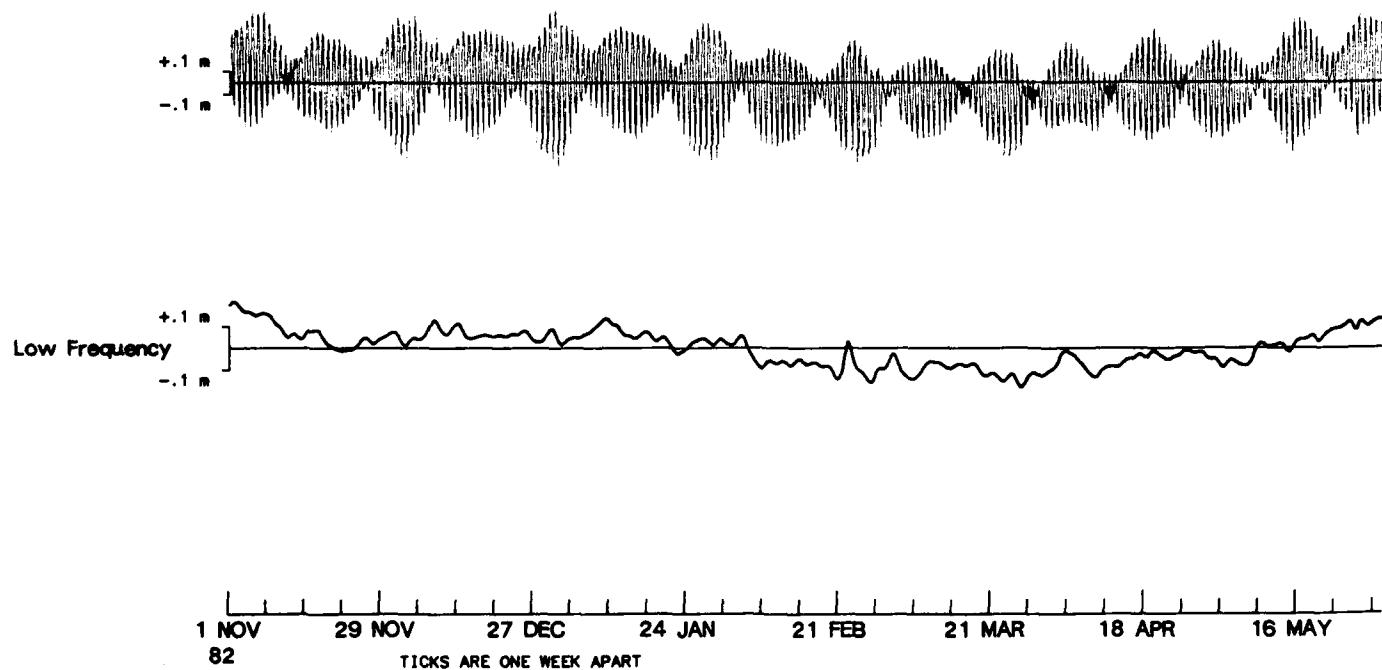


S2 : SEA LEVEL
May - Nov 82

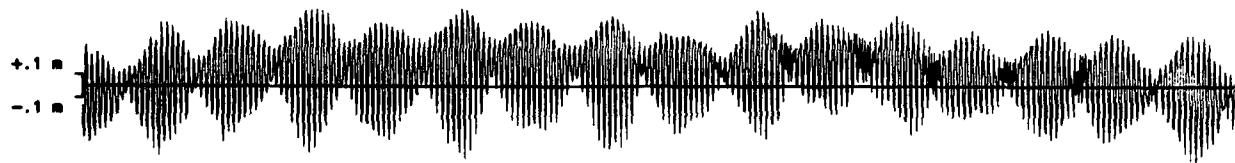


1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
82 TICKS ARE ONE WEEK APART

S2 : SEA LEVEL
November 1982 - May 1983

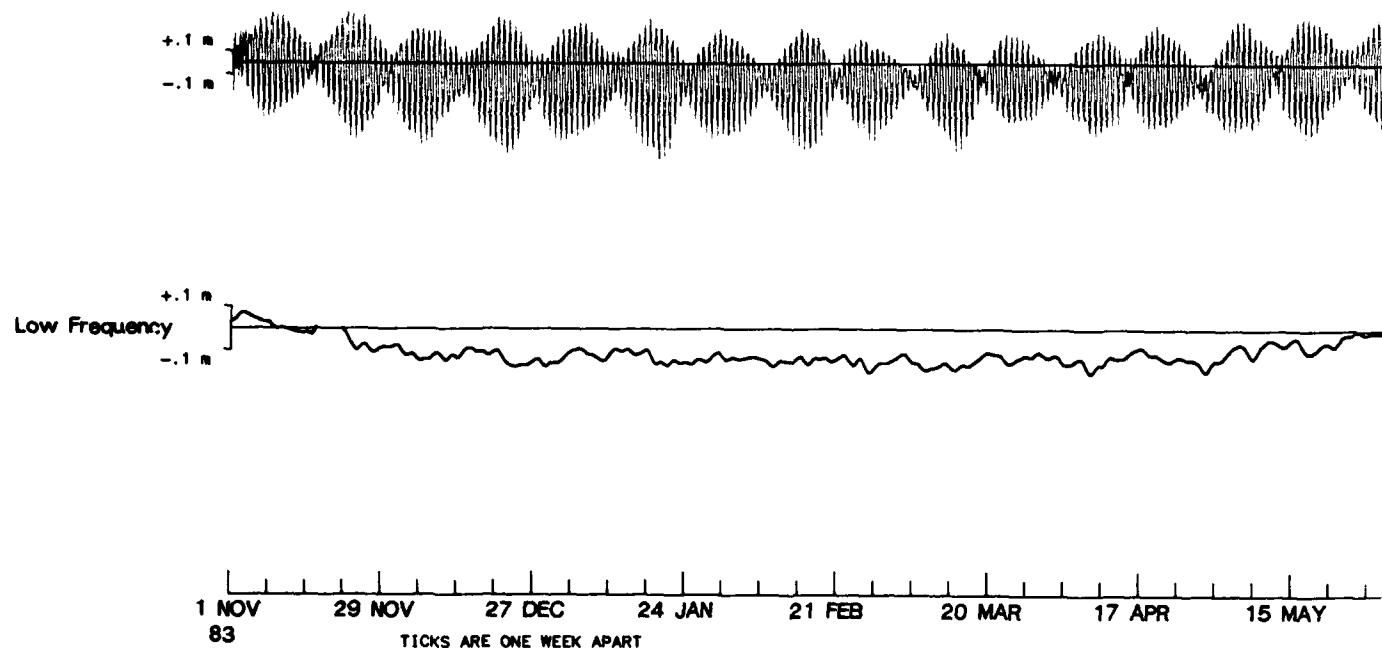


S2 : SEA LEVEL
May - November 1983

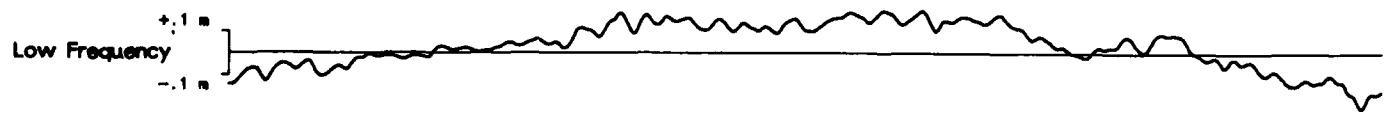
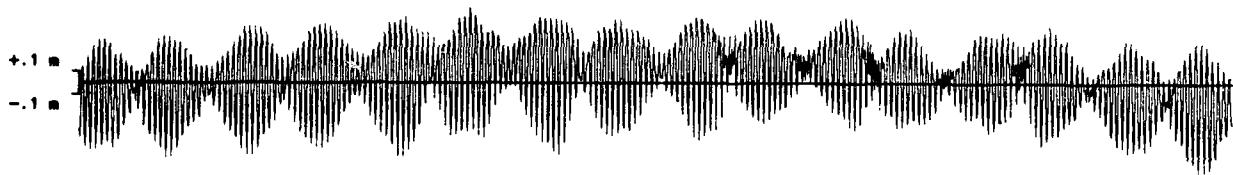


1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
83
TICKS ARE ONE WEEK APART

S2 : SEA LEVEL
November 1983 - May 1984



S2 : SEA LEVEL
May - November 1984



1 MAY 29 MAY 26 JUN 24 JUL 21 AUG 18 SEP 16 OCT 13 NOV
84 TICKS ARE ONE WEEK APART

END
DATE
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10-86